



# TOTALLY TERMITES (GRADES 3 – 5)

## Lesson Overview

Students will explore the world of termites. This lesson includes a close-up look at termite specimens, special termite adaptations and insect anatomy. Students will also learn about property risks associated with termites, and how pest control professionals manage termite problems.

## Correlation with National Science Teachers Association (NSTA)

- History and Nature of Science: Content Standard G: Science as a human endeavor
- Life Science: Content Standard C: The characteristics of organisms
- Science as Inquiry: Content Standard A: Abilities necessary to do scientific inquiry
- Science in Personal and Social Perspectives: Content Standard F: Types of Resources, Changes in Environments, Science and Technology in Local Challenges

### Key Concepts:

- Termites in the home are animals that are out of place; they are considered pests.
- Termites are amazing insects; they have unique mouthparts, a special adaptation, that helps them survive.
- Termites have specific body features that make them insects.
- Termite behavior is influenced by hunger.

### Vocabulary Words:

Adaptation  
Insect  
Mouthpart  
Pest  
Pest Management  
Risk  
Specimen  
Subterranean Termite

### Skills Learned:

Discussion  
Cause/Effect  
Communication  
Social  
Classification  
Appreciation  
Recognition  
Observation



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## Getting Ready:

### **Estimated Time:**

- Preparation: 20 Minutes
- Lesson: 45 – 60 Minutes

### **Materials:**

- Find specimens of the Subterranean Termite: Winged Reproductive Swarmers and Workers (see Additional Resources section for termite sources)
- Hand Lenses (one per student is ideal)
- Termite Fact Sheet
- Termite Anatomy Sheet

### **Preparation:**

- Arrange for and gather termite specimens (see Resources). One specimen per student is ideal.
- Gather hand lenses (one per student is ideal).
- Invite a termite control specialist into the classroom as a guest speaker.
- Print a copy of the Termite Fact Sheet for reference.

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### Procedure

#### 1. Termite Introduction:

Show students a picture of a termite. Explain that a termite was one of the pests that we explored during the first pest lesson. Termites are insects. Introduce what makes an insect an insect. Use the picture of the termite to point out each body part as they are discussed.

##### All insects have:

- six legs (three pair on each side of the thorax)
- three body parts (head, thorax, abdomen)
- two antennae (feelers on the top of their head)
- most, not all, insects have wings

#### 2. Termite Discovery Time

*Note: If you were able to arrange for a termite control specialist to come to your classroom as a guest speaker, introduce him/her to the students and involve them in this lesson as much as possible.*

#### 3. Termites Up Close: Hands-on Exploration

Pass out termite specimens and hand lenses, preferably one specimen and one lens per student.

- What does a termite really look like up-close?
- What shape is it?
- What color is it?
- Count the legs, count the body parts, and count the antennae.
- Does it have wings?
- Look at the mouthpart, or pincers, of the termite. What does it look like?

#### Termites Mouths

The termite mouthpart is a special adaptation that allow them to eat wood and wood products. They have hard, saw-toothed jaws that help them to eat lumber, wallpaper, plastics and fabric made of plant fibers. Worker termites are small, creamy white insects. They are the most numerous and the cause of all termite damage.

#### Where Do Termites Live?

Termites can be found in almost every state as well as Mexico and parts of Canada. Termites build their nests in the ground. They construct mud tubes that are used to explore for food and connect their underground nest to that food source. They can enter a building without direct wood contact with the soil through such tubes. Termites can find their way into a structure through an opening as small as 1/32 of an inch (the size of a pin head!). Winged Reproductives are termites that leave the colony to mate, reproduce and start new colonies.



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### What Do Termites Eat?

Termites feed on cellulose that is found in woody plants. In the wild, termites would naturally eat woody plants like trees. When they move in with humans, they eat wood and paper products such as books, cardboard, boxes and a variety of other items. Even buildings with steel framing and masonry walls are termite targets because of the wood door and window frames, cabinets and shelving within the buildings.

### Why are termites considered pests? What kinds of risks are associated with termites?

Termites eat non-stop, 24 hours a day, seven days a week! These pests cause a lot of damage to a lot of homes and buildings every year.

### 4. Termites: What is pest management? What is a termite inspection?

Pest management is a way that people control pests in their home. Pest control professionals are trained and educated experts who know how to manage pests in an environmentally or earth-friendly manner. Pest control managers help us find out what the pest is and how the problem can be treated. Termite inspectors are pest control managers that work with specific pests, termites. A termite inspection is when professional termite inspectors come to your home and find areas where a termite attack is most likely to occur. If termites are found, the specialist can design a treatment plan to control the current infestations and protect your home from future infestations. Some things that a termite inspector might do include removing scrap wood and paper debris, improving drainage away from the home, breaking wood-to-soil contact, and more.

### 5. Build-A-Termite Activity

Create a large circle with the children. Using the children as “body parts” begin to build-a-termite (a worker termite) in the middle of the circle. Ask for volunteers to be the termite’s three body parts: one head, one thorax, and one abdomen.

- **Body:** Have each child kneel down and curve into a “ball” forming three body parts in a row.
- **Legs:** Have six volunteers act as the termite’s legs. Have them lay down with their heads next to the thorax and legs facing out (have them keep their legs together as each child represents one leg).
- **Antennae:** Ask for two children to be the antennae. Have them lay down with their heads next to the head body part and facing out.
- **Pincers:** Ask for two children to act as the termite’s powerful jaws, or pincers. These kids can kneel inside the antennae next to the head body part. Have these two kids hold out their arms directly in front of them and place fold their hands together. Then have the two “pincers” touch each other. And, voilà, you have created a living worker termite! You might want to do this activity two times, so everyone will have a chance to observe and build-a-termite.



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## **Assessment**

- Test students using the attached termite quiz.
- Play Hangman using termite and other pest-related words.
- Add termite and other pest-related words to spelling lists.
- Have students journal about what they learned.
- Have students draw a picture of a termite.
- Conduct a spelling bee using termite and other pest-related words.

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**TERMITE QUIZ**

**NAME:** \_\_\_\_\_

**WORD BOX**

Termite

Insect

Mouthpart

Adaptation

Three

Six

Using the words in the word box, fill in the blanks with the correct word. Each word in the word box will be used and used only one time.

1. A \_\_\_\_\_ loves to eat wood!
2. Insects have \_\_\_\_\_ body parts: a head, thorax and abdomen.
3. A termite has a special \_\_\_\_\_ that allows it to chew wood.
4. A termite's \_\_\_\_\_ has hard, saw-toothed jaws.
5. Insects have \_\_\_\_\_ legs.
6. A termite is an \_\_\_\_\_ not a spider.

Draw a picture of a termite below. Label these parts: abdomen, antenna, head, leg and thorax.



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## Resources, Visual Aids, and Handouts

### **Web Sites**

**PestWorld for Kids**, from the National Pest Management Association

[www.pestworldforkids.org](http://www.pestworldforkids.org)

**National Pest Management Association, Inc.**

10460 North Street

Fairfax, VA 22030

Phone: (703) 352-6762

[www.pestworld.org](http://www.pestworld.org)

**BugInfo**, from Univar USA, Inc [www.BugInfo.com](http://www.BugInfo.com)

### ***Insect Kits and Samples***

#### **Insect Lore**

PO Box 1535

Shafter, California 93263-1535

800•LIVE BUG

[www.insectlore.com](http://www.insectlore.com)

#### **Insect-Sale**

Fang-Ying Huang

Po. Box 70 , Chia-yi city

Taiwan 600 R.O.C.

[www.insect-sale.com](http://www.insect-sale.com)

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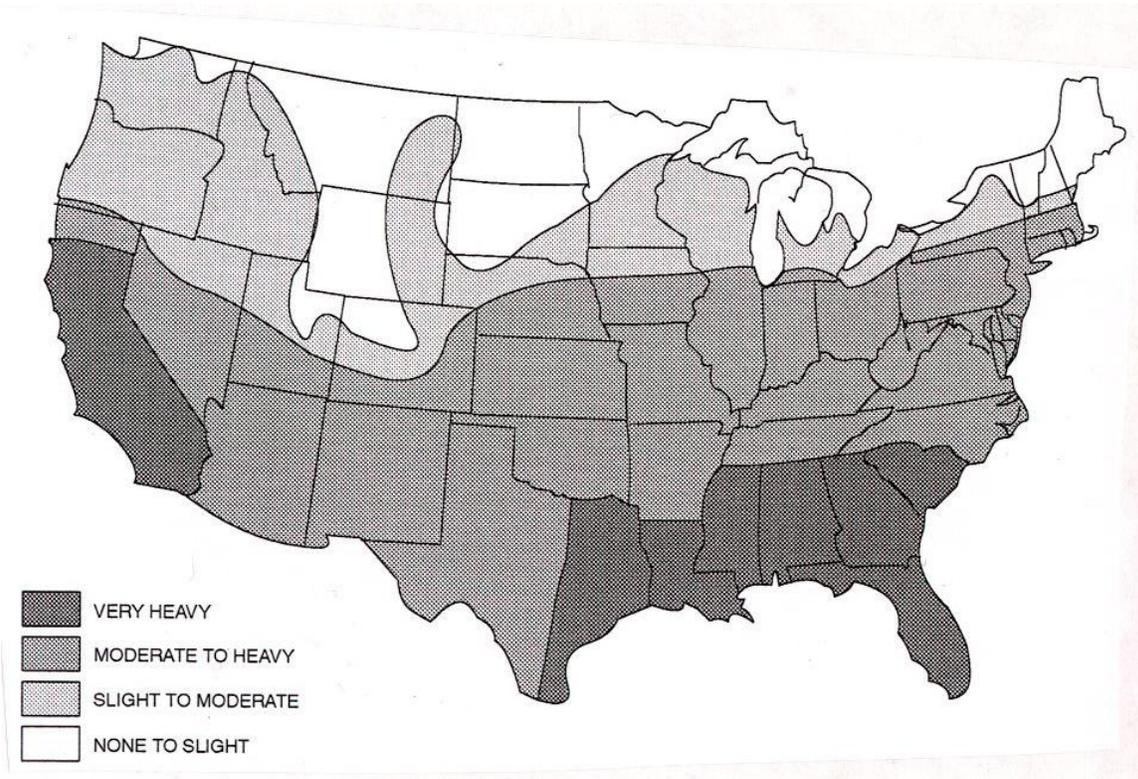
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### **Termite Fact Sheet**

1. Termites are insects. They have hard, saw-toothed jaws that help them to eat lumber, wallpaper, plastics, and fabric made of plant fibers.
2. There are four different groups of termites: dampwood, drywood, subterranean and mound builders. Dampwood termites like to live and feed in very moist wood. Drywood termites can survive in very dry conditions and do not need moisture or soil. Subterranean termites are very common and live and breed in soil. Mound builders live in Africa, Australia, Southeast Asia and part of South America; they are able to build large earthen towers 25 feet or higher.
3. Termites can be found in almost every state as well as Mexico and parts of Canada. They favor warmer climates and actively avoid light. (See range map below)
4. As a species, termites date back to the time of the dinosaurs.
5. Termites are 24/7 bugs, which means they eat non-stop – 24 hours a day, seven days a week. They feed on wood and may also destroy paper products such as books, cardboard, boxes and anything containing cellulose. Even buildings with steel framing and masonry walls are targets because of the wooden door and window frames, cabinets and shelving within the buildings.
6. Termites live in underground colonies, some containing over two million members.
7. The social structure of a colony includes the queen, king, winged reproductive swarmers, soldiers, and workers. Worker termites are small creamy white insects. They are the most numerous and the cause of all the termite damage.
8. Swarmers, or winged reproductives, are termites that leave the colony to mate, reproduce and start new colonies.
9. In a large nest, a queen and king may live for 15 years, with the queen laying up to one egg every 15 seconds for most of her life.
10. Termites can cause serious damage to structures often long before they are discovered, i.e., more than \$1.5 billion in property damage a year to over 600,000 homes in the United States.
11. How do termites enter the home? The most common termite, the subterranean, builds its nest in the ground. These termites construct mud tubes that are used to explore for food and connect their underground nest to that food source. They can enter a building without direct wood contact with the soil through such tubes. They can find their way into a structure through an opening as small as 1/32 of an inch (smaller than the size of a pinhead!).
12. A pest control professional, or termite control specialist, can provide protection from termite infestations. Professional termite inspectors are trained to locate specific areas in homes where a termite attack is most likely to occur. If termites are found, the specialist can design a treatment plan to control current infestations and to protect homes from future infestations.

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## Termite Range Map



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### Termite Anatomy Sheet

