



Termites Digest Wood Thanks to Microbes

NAME _____

DATE _____

This handout supplements the I Contain Multitudes film [*Termites Digest Wood Thanks to Microbes*](#).

1. What serves as a preferred food source for the termites featured in this film? _____
 - a. leaves
 - b. protists
 - c. simple sugars
 - d. wood
2. Explain why termites are able to digest wood when humans cannot.
3. Why is it important for microbes found in the guts of adult termites to be passed to juvenile termites?
4. Large molecules present in the food of termites are broken down into smaller molecules. Why is this important? _____
 - a. Only small molecules can be absorbed by the microbes found in the guts of termites.
 - b. Large molecules of cellulose cannot be absorbed into the cells of the termites.
 - c. Enzymes present in the gut microbes cannot act on large molecules.
 - d. Gut microbes synthesize nutrients needed by the termites from the small molecules.
5. Explain how partnerships between animals and gut microbes have shaped the evolution of the digestive systems.
6. In a mutualistic relationship, both species benefit from their interactions with each other. Which of the following is a benefit that the microbes receive from living inside termites? _____
 - a. The microbes get access to simple sugars from the termites.
 - b. The microbes are provided easy access to wood, a source of food.
 - c. The microbes make wood from the food consumed by the termite.
 - d. Termites make energy and the microbes are able to use it.

7. a) Explain how a termite benefits from the microbes inhabiting its gut. Support your answer with information you learned in the film.

b) Symbionts are organisms living in a symbiotic relationship. Termites and their gut microbes are examples of symbionts. State why the microbes inhabiting the termite gut are classified as *endosymbionts*.

8. Facts are statements based on data; there is evidence to support them. Inferences are assumptions based on what you observe; they are logical conclusions and can be correct or incorrect.

Based on what you have learned from the film, indicate which of the following statements are facts and which are inferences by writing an “F” or an “I” in the box next to the statement. Provide evidence to support your decision in the last column.

	Statement	Fact (F) or Inference (I)	Evidence
a.	Termites chew up and ingest wood.		
b.	The microbes inhabiting the guts of termites are endosymbionts.		
c.	Termites evolved from cockroaches.		
d.	If the termite gut microbes are destroyed, termites will die.		
e.	Humans possess gut microbes that aid in the digestion of plant material.		
f.	Trophallaxis is an instinctive behavior that termites engage in without having to learn it.		