

NAME _____

DATE _____



Symbiosis Scramble

PRIOR TO THE LESSON:

Print and cut out Iron cards and B Vitamin cards on different colors of paper.

Make enough for each student to choose one card of each color. Keep the cards in separate piles, organized by color and shuffled.

LESSON PROCEDURE:

1. Review the definitions of Mutualism, Parasitism, and Commensalism prior to the activity, or review the definitions during the activity if you wish.
2. Have students blindly select one card of each color.
3. All students stand up.
4. Tell students that they are now role-playing bacteria in the gut. All bacteria need both Iron and B Vitamins. Some supply their own, and some need to obtain one or both of these resources from their environment.
5. Instruct students to "Move around the room and find someone with whom you could be in a MUTUALISTIC relationship. Stand near them." (Option: Post or review the definition of Mutualism)

Example: A student with the cards "Needs Iron" and "Provides B Vitamins" would form a Mutualistic relationship with someone who has the cards "Provides Iron" and "Needs B Vitamins."

* Some relationships will require more than two students to meet everyone's needs.

* Some students will not be able to form a relationship—that is OK.

6. Look for, point out, and discuss the following:
 - Students who were able to form a relationship with only one other student.
If this occurred in reality, it would be a very efficient relationship for both bacteria.
 - Students who formed relationships with two or more students to get what they need.
This is possible in reality, but only for bacteria in close proximity to each other.
 - Students who were unable to form a relationship.
What would happen to these bacteria in reality?

7. Repeat step 5 for two other types of symbiosis: Parasitism and Commensalism

8. Discuss the following:

What role did Competition play in this exercise? Were any of you "crowded out" from standing near a particular person / bacterium Why do you suppose this happened?

 **NEEDS**
B Vitamins

PROVIDES 
B Vitamins

 **NEEDS**
B Vitamins

PROVIDES 
B Vitamins

 **NEEDS**
B Vitamins

PROVIDES 
B Vitamins

 **NEEDS**
B Vitamins

PROVIDES 
B Vitamins

NEEDS
Iron

PROVIDES
Iron

NEEDS
Iron

PROVIDES
Iron

NEEDS
Iron

PROVIDES
Iron

NEEDS
Iron

PROVIDES
Iron