



Modeling Bacteria Growth: A more realistic model

Student Objective:

Students will observe that bacteria populations are controlled by their need for food, space and a healthy environment to live and reproduce.

Introduction for teachers:

Bacteria need nutrients, space and a healthy environment to live and reproduce, like all living creatures. If a bacterium's environment is missing one of these things, the bacterium will die. The following activity models the life of a bacterial colony. Based on chance (the roll of a die) the bacteria live, reproduce, or die.

Materials:

30+ markers per group (beans, m&m's, etc)
Bacteria Growth grid (Student handout on next page)
Dice (one per group)

Activity Instructions:

The rules and instructions are on the growth grid page. Go over the rules as a class before the students begin their modeling activity.

Record your populations in a T-chart.

# of die rolls	# of bacteria
0	1
1	2
2	4
...	...

Once students have had an adequate time to model the growth (~15 rolls of the die), have a discussion with the class.

- Look for a pattern in the # of bacteria column. Is there a pattern? Describe what is happening from step to step.
- How do the patterns you found here compare to the patterns from the other bacteria model used before the museum trip?
- Go back to the directions of this game. When do the bacteria die?
- If you want bacteria to grow or not grow, what do you need to control?