Lose a Million BACTERIA—The Game

"Lose a Million (Bacteria)" is a fun, interactive game based on the popular TV game show, *"Who Wants to be a Millionaire."* The game begins with a million bacteria. The object of the game is to lose all the bacteria. This game encourages class participation and promotes cooperative learning while introducing students to safe food handling practices.

Procedure:

- Food safety questions are provided on overhead transparencies to use for the game. *A variation would be to prepare trivia questions based on concepts or vocabulary you want to review. You do not need to provide multiple choice answers, they can just be standard open-ended questions.*

- Divide the class into two teams and number off on each team. Each team starts with a million bacteria. For every correct answer, the amount of bacteria decreases by 200,000-- from 1,000,000 to 800,000 to 600,000 to 400,000 all the way down to "Winner". Keep score on the board for each team.

- Each team gets three options, each of which can only be used once during the game. Write the following three options on the board: 50/50, ASK A FRIEND ON YOUR TEAM, OR ASK THE ENTIRE CLASS. Once the team uses an option, it is erased.

- Determine which team will start the game. Put the first transparency on the overhead and cover all the questions. Uncover one question and have the host (usually the instructor) read the question and four possible answers. If the player knows the answer, he/she can answer. If the player is correct, the team score is reduced by 200,000 bacteria and player # 1 is replaced by player # 2. Play then continues with the other team.

- If the player does not know the answer, he/she may choose an option. If the student chooses 50/50, the host will remove two of the answer choices. If the student chooses ASK A FRIEND ON YOUR TEAM, he/she can choose **one** person to help out with the answer. If the student chooses ASK THE ENTIRE CLASS, the instructor opens up the question to the class and the player may choose any of the answers given. *Remember, once an option is used, it is erased and cannot be used again by that team.* When no more options remain, the players must try to answer their own question even if they don't know it. Play continues even if an incorrect answer is given. However, the score remains unchanged with an incorrect answer.

- The game is over when all of the questions are gone or one team loses all of its bacteria.

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1. Pathogens that were not previously known to cause human illness are called:

☐**a)** Energetic

☐**b)** Egyptian

☐**c)** Emerging

☐**d)** Elemental

2. Botulism is most commonly caused when this home activity is done improperly:

☐**a)** Canning

☐**b)** Baking

☐**c)** Grilling

☐**d)** Vacuuming

3. This bacterium is the leading cause of diarrhea in the U.S., resulting in up to 6 million illnesses each year.

☐**a)** *Lactobacillus*

☐**b)** *Campylobacter jejuni*

☐**c)** *E. coli* O157:H7

☐**d)** *Vibrio cholerae*

4. What mathematical value is used to calculate the reduction of bacteria in order to make food safe?

☐**a)** Quotient

☐**b)** Square Root

☐**c)** Radius

☐**d)** Logarithm

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1. Which of these is not one of the "4 Cs" of proper food safety behavior?

☐**a)** Clean ☐**c)** Cook

☐**b)** Chill ☐**d)** Contaminate

2. This government agency regulates food safety of all products made from produce, dairy, eggs, and seafood.

☐**a)** CDC ☐**c)** FDA

☐**b)** NIH ☐**d)** USDA

3. Which of these foods is not kept safe through the process of pasteurization?

☐**a)** Milk ☐**c)** Tomato

☐**b)** Orange Juice ☐**d)** Egg

4. Which of these is not a cause of emerging pathogens?

☐**a)** DNA Mapping ☐**c)** Transformation

☐**b)** Transduction ☐d) Conjugation

1. Which of these would not be found on a food label?

☐**a)** Expiration Date

☐**b)** Sell by Date

☐**c)** Blind Date

☐**d)** Use by Date

2. The growth of this foodborne pathogen is of greatest concern at refrigerator temperatures.

☐**a)** *Listeria*

☐**b)** *Salmonella*

☐**c)** *E. coli*

☐**d)** *Shigella*

3. Which of the following conditions have food safety implications?

☐**a)** Curdled Milk

☐**b)** Freezer Burn

☐**c)** Prepared food left out at room temperature for more than 2 hours

☐**d)** Raw eggs that float in water

4. What percentage of people say they wash their fruits and vegetables before eating them? (1998 FDA survey)

☐**a)** 52%

☐**b)** 79%

☐**c)** 65%

☐**d)** 97%

1. What businesses employ the greatest number of high school students?

☐**a)** Supermarkets

☐**b)** Movie Theatres

☐**c)** Delis

☐**d)** Fast Food Restaurants

2. What food temperatures constitute the "Danger Zone"?

☐**a)** 0° F - 32° F

☐**b)** 40° F -140° F

☐**c)** 140° F - 180° F

☐**d)** 180° F - 210° F

3. How does irradiation make food safe?

☐**a)** It sterilizes it.

☐**b)** It damages the bacteria's DNA.

☐**c)** It makes it glow in the dark.

☐**d)** It boils all the water out of the food.

4. How long does it take for *Salmonella* to grow from 10 bacteria per gram to 1,000,000 per gram at room temperature?

☐**a)** 13 hours

☐**b)** 24 hours

☐**c)** 48 hours

☐**d)** 72 hours

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1. Which of these groups is typically not at high risk for foodborne illness?

☐**a)** Children under age one

☐**b)** Teenagers who rollerblade

☐**c)** Women who are pregnant

☐**d)** Adults over age 65

2. What percentage of people say they do not wash their hands after handling raw meat? (1998 FDA Survey)

☐**a)** 25%

☐**b)** 10%

☐**c)** 44%

☐**d)** 50%

3. How many cases of gastrointestinal illnesses caused by food does the CDC estimate each year? (CDC MMWR)

☐**a)** 76,000,000

☐**b)** 5,200

☐**c)** 323,000

☐**d)** 500,000

4. What process did NASA adopt in the 1970s to ensure that food is safe for astronauts in space?

☐**a)** Pasteurization

☐**b)** Acidification

☐**c)** HACCP

☐**d)** Biotechnology

Answer Key

Answers to Page #1

1. c) Emerging
2. a) Canning
3. b) *Campylobacter jejuni*
4. d) Logarithm

Answers to Page #2

1. d) Contaminate
2. c) FDA
3. c) Tomato
4. a) DNA Mapping

Answers to Page #3

1. c) Blind Date
2. a) *Listeria*
3. c) Prepared food left out at room temperature for more than 2 hours
4. d) 97%

Answers to Page #4

1. d) Fast Food Restaurants
2. b) 40° F - 140° F
3. b) It damages the bacteria's DNA
4. a) 13 hours

Answers to Page #5

1. b) Teenagers who rollerblade
2. a) 25%
3. a) 76,000,000
4. c) HACCP