Pizza and Pathogens

Lesson 1

Required Materials
- PowerPoint slide show for Lesson 1
- Homework print-out for Lesson 1 and Truth or Lie Worksheet
- Optional: Prepared bowl of oatmeal that is cold, clumpy and extremely thick, visibly difficult to stir
- Optional: Generic enzyme supplements, such as NOW Foods Super Enzymes
  (Include one per student if possible for homework)

Preparation
- Print Homework and Worksheet pages for each student
- If teaching more than one lesson, print the family letter for each student
- Request necessary media equipment for screen and laptop (or other necessities for a PowerPoint)
- Optional: Trial run the experiment with oatmeal and enzymes
- Optional: Prepare before class two bowls of oatmeal (should be cold, clumpy and thick; difficult to stir)

Introduction
Have the PowerPoint ready to go on the screen.
Pose this question or something similar: “What do you know about food poisoning? Do you know anyone how has gotten sick with food poisoning?”
Gather some good examples from students.
“What causes this?”
Address the student’s misconceptions about food poisoning or bacteria.

Game
Pass out Truths or Lie worksheet. Give students ample time to complete. End by asking them one last Truth or Lie verbally, “Bacteria is good and bad. Truth or Lie?”

Transition
Discuss answers and address misconceptions, tell students to check answers during the PowerPoint.

Are bacteria dead? No. They are alive just like you and me.

On January 1, 2013 there were over 7 trillion humans on the Earth. Imagine a world with over 700 million times more. Not 700 million more, 700 million times more. That would be 5 million trillion trillion.

And we need those bacteria. Why?

They help us breathe. The type of bacteria pictured here produce oxygen, which we use to breathe. Bacteria living in the ocean produce half of the oxygen in the atmosphere.

Bacteria can even live where it’s below freezing all the time. Like in this iceberg.
Extension Activity:

Oatmeal Experiment (Or How Bacteria Help Digest Our Food)

Before class, prepare two bowls of really clumpy, cold oatmeal. It should look thick and hard to stir.

To begin, pass around the oatmeal if possible or walk it around the class, showing how clumpy it is.

“Students, this would be pretty a hard to digest, right? It’s pretty thick and tough to swallow even, I bet. How does our digestive system do it?”

“Well, bacteria in our gut produce something called enzymes. That’s a fancy word for a something that helps us eat, say, oatmeal. They help separate the stuff you need (nutrients) and the stuff you don’t need (waste).”

Show the students that you have some enzymes in the capsules/supplements.

“These enzymes, which good bacteria in our intestines make, will be mixed into the oatmeal -- with nothing else -- and we’ll see what happens.”

Put the oatmeal out of sight or on your desk, so the surprise isn't ruined. Return to it before you pass out homework.