



Lesson Title	Viruses, Bacteria, and Your Health
Length of Lesson	2 days (split)
Created By	Hannah Brackin
Subject	8 th Science
Grade Level	7 th -8 th
State Standards	Eighth Grade: 3c
DOK Level	DOK 1
DOK Application	Draw, label
National Standards	Eighth Grade: 5-8: C
Graduate Research Element	Antibiotic resistance is a growing problem and many of the compounds that I develop are screened for antibiotic activity.

Student Learning Goal:

State Standards Eighth Grade:

(3c) Describe how viruses, bacteria, fungi, and parasites may infect the human body and interfere with normal body functions. (DOK 1)

National Standards: 5-8: C:

Disease is a breakdown in structures or functions of an organism. Some diseases are the result of intrinsic failures of the system. Others are the result of damage by infection by other organisms.

Materials Needed (supplies, hand-outs, resources):

Photos of infections (i.e. flesh eating bacteria), Power point presentation, auger filled petri dishes, Q-tips, and post its

Lesson Performance Task/Assessment:

Based on what the students know about the spread of bacteria, they will decide what areas of the school have the most bacteria. Once they chose locations, they will go and swab the area using a Q-tip and transfer the bacteria to their petri dish. Later, the students will have to analyze the bacteria that they grow and relate this new data back to areas of the school that it was collected from and what that means about the cleanliness.

Lesson Relevance to Performance Task and Students:

The petri dishes that the students grow their bacteria in will give them the chance to see actual bacteria that they did not realize they encounter on a daily basis.



Anticipatory Set/Capture Interest:

Show students pictures of the affects of certain bacteria and viruses on people.

Guided Practice:

The teacher will present the basics of bacteria and viruses (1 and 2 on notes outline). Students will be placed into groups of 3-4. Each group will be given a plate with auger. They will divide the plate into even sections depending on the number of students in a group. They will be instructed to think of a place in the school where they believe they could find the most bacteria. Each group will make a list of 3-4 things and then they will go and use a Q-tip to swab the location and then swab onto the plate. The plates will be labeled and put in the sun for one week so that the bacteria can grow.

One week later (if left in the sun) the students will come back and analyze the bacteria on their dishes. They will have to answer questions such as “Where in the school can you find the most bacteria? The least?” and “Were you surprised by these findings”. Once the groups have looked at their results, the teacher will cover infection and treatment of infections (3 and 4 on notes outline).

Independent Practice:

Within the groups, each student will choose an area in the school where they believe they could find bacteria. The students will then analyze the bacteria that grow from the location that they chose. They will be asked to sketch their petri dishes after the one-week period and to compare the amount of bacteria from across the school.

Remediation and/or Enrichment:

Remediation:

Individual IEP. Have students agree to 4 areas in the school to test as a class.

Enrichment:

Have the students count the number of bacteria in the dishes and analyze under a microscope.

Check(s) for Understanding:

How are viruses similar to organisms? How are they different?

Is influenza an active or a hidden virus? Explain.

Why might a toilet seat be cleaner than a computer mouse?



Are all bacteria harmful to humans? List reasons why not all bacteria are harmful.

Closure:

Students will have the opportunity to see the bacteria that they encounter daily and that may be responsible for when they get sick. They will have a better understanding of how to stay healthy.

Possible Alternate Subject Integrations:

Biology: Introduction to cells and reproduction.

Teacher Notes:

Petri dishes:

<http://www.amazon.com/Petri-Dishes-Pre-poured-Swabs-plates/dp/B004MKHNJK>