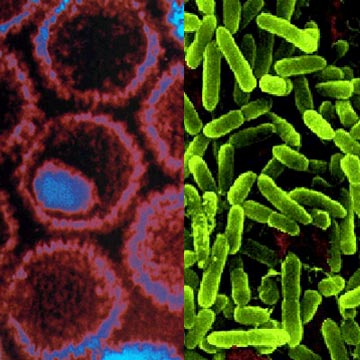
Unit 9 - M

Bacteria and Viruses

Chapter 2

(Holt Book A)



Chapter 2 Section 1: Bacteria and Viruses

Chapter 2 Section 2: Bacteria’s Role in the World

Chapter 2 Section 3: Viruses

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_\_

**Bacteria and Viruses Syllabus**

**Vocabulary:**

**SECTION 1: BACTERIA AND ARCHAEA**

prokaryote

binary fission

endospore

cyanobacteria

flagella

**SECTION 2: BACTERIA’S ROLE IN THE WORLD**

bioremediation

nitrogen fixation

antibiotic

pathogenic bacteria

genetic engineering

**SECTION 3: VIRUSES**

virus

host

parasite

**Readings**:

Chapter 2 Section 1: Pages 22-29

Chapter 2 Section 2: Pages 30-33

Chapter 2 Section 3: Pages 34-37

**Assignments**:

**At home expectations: (CHECK OFF WHEN COMPLETED)**

* + Learn vocabulary and definitions.
  + Read the chapter and complete the “Directed Readings” for Section 1, 2 and 3.
  + Make Flashcards or Two-Column Notes for the vocabulary words – study 2 mins EVERY DAY!
  + Complete Yogurt Lab questions
  + Complete Chapter Review
  + Study for Chapter Test by reviewing the vocabulary, reviewing the DRA, Chapter Review, Study Guide, and the notes and activities.
  + Completed anything not completed in class.
  + Anything not completed in the packet due to absence. Dates of absence\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Class work:**

1. Class Notes.
2. Video Notes.
3. Bacteria Webquest Group Projects and Presentations/Notes
4. Classroom demonstrations/activities on bacteria and viruses
5. Bacteria or Virus worksheet
6. Yogurt Lab
7. Unit Test.

**Expected Completion Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Extra Credit - 5 Pts**

* Make a word find (with answer key) **or** crossword puzzle that contains ALL the vocabulary word for the unit. Ask before you start your project.

<http://puzzlemaker.discoveryeducation.com/>

Be as creative as you would like!

**Unit Vocabulary Definitions**

**SECTION 1: BACTERIA AND ARCHAEA** Pages 22-29

|  |  |  |
| --- | --- | --- |
| [File:Average prokaryote cell- en.svg](http://upload.wikimedia.org/wikipedia/commons/5/5a/Average_prokaryote_cell-_en.svg) | prokaryote | an organism that consists of a single cell that does not have a nucleus |
| http://academic.pgcc.edu/~kroberts/Lecture/Chapter%2011/11-02_BinaryFission_0_L.jpg | binary fission | a form of asexual reproduction in single-celled organisms by which one cell divides into two cells of the same size |
| http://pscantie.myweb.uga.edu/images/endospore%20structure.jpg | endospore | a thick-walled protective spore that forms inside a bacterial cell and resists harsh conditions |
| http://1.bp.blogspot.com/-nFBiA8oIonk/TucB0EYy8KI/AAAAAAAADT0/4zSfc6pWb20/s1600/cyanobacteria.jpg  blue-green color | cyanobacteria | bacteria that contain chlorophyll and can undergo photosynthesis |
| http://static.newworldencyclopedia.org/thumb/0/08/Flagella.png/300px-Flagella.png | flagella | a hair-like tail used for movement |

**SECTION 2: BACTERIA’S ROLE IN THE WORLD** Pages 30-33

|  |  |  |
| --- | --- | --- |
| http://www.bestechcorp.com/images/sce/biocycle%20300dpi.gif | bioremediation | the biological treatment of hazardous waste by living organisms |
| http://www.permaculturenews.org/images/nitrogen_fixing.gif | nitrogen fixation | process in which nitrogen in the air is transformed into a form that plants can use |
| http://media.npr.org/assets/img/2012/08/09/antibiotics-bb165734de9ccce7797867f1e8080f79600be41d-s6-c10.jpg | antibiotic | medicine used to kill bacteria and other microorganisms |
| http://www.topnews.in/health/files/pathogenic-bacteria.jpg  Ack! Makes you sick!!! | pathogenic bacteria | bacteria that cause disease |
| http://www.earthtimes.org/nsimages/files/genetic_engineering_gm_encyclopaedia.jpg | genetic engineering | when humans change the genes of any living thing |

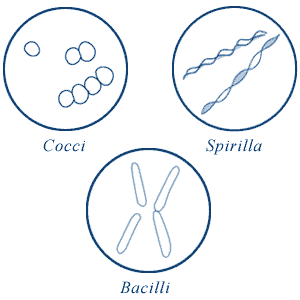
**SECTION 3: VIRUSES** Pages 34-37

|  |  |  |
| --- | --- | --- |
| http://facstaff.cbu.edu/~seisen/Viruses_files/image003.jpg http://us.123rf.com/400wm/400/400/eraxion/eraxion1005/eraxion100500332/7286266-virus-close-up.jpg | virus | a microscopic particle that gets inside a cell and often destroys the cell |
| http://www.biologyjunction.com/images/lytic_cycle2.GIF  Oval shaped cell is the host! | host | an organism from which a parasite takes food or shelter |
| http://www.biologyjunction.com/images/lytic_cycle2.GIF  Key shaped attached to the cell is the parasite! | parasite | an organism that lives in or on a host, it obtains nourishment from the host without benefiting or killing the host |

**Section 1 - Class Notes on Bacteria**

Characteristics of Bacteria and Archaea

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Three Shapes of Bacteria

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## \* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are whip-like \_\_\_\_\_\_\_\_\_\_\_\_\_\_ that help move a bacteria

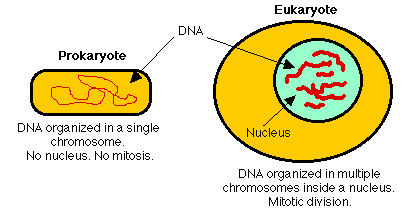
No Nucleus!

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Prokaryotic Reproduction

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Endospores

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Domain Bacteria – Classification of Bacteria

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Decomposers - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Cyanobacteria - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Domain Archaea – Harsh Environments

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Methane makers - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Section 2 - Class Notes on Bacteria’s Role in the World**

Good for the Environment

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Nitrogen Fixation

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Recylcing

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Cleaning up - Bioremediation

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Good for People

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Bacteria in your Food

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\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Making Medicine

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Insulin - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Genetic Engineering - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Harmful Bacteria

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Pathogenic bacteria - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Diseases in other organisms

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**Section 3 - Class Notes on Viruses**

Viruses

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Very Small - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Change rapidly -\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Non-living - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

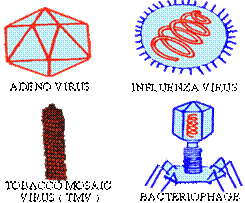
Why don’t antibiotics work on viruses? - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What’s the harm in trying to treat viruses with antibiotics?- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Classifying Viruses – Two ways

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Four Basic Shapes of Viruses



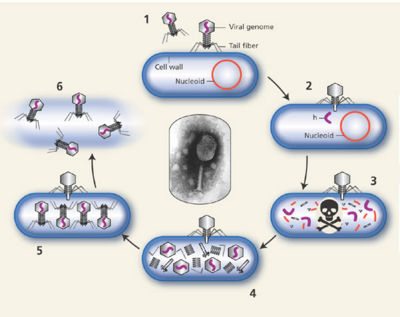
Spheres – HIV virus

Crystals – polio virus

Cylinders – tobacco plants

Spacecraft - bacteria

The Lytic Cycle - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



Draw your own version below:

A Time Bomb

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Treating Viruses

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Vaccinations - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chicken pox - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Watch the video clip on how a virus spreads then we’ll discuss (see NPR link on viruses from edline)

Good practices - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Video Notes -** Bacteria – Friends or Enemies ??

1. (0:51) There are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of bacteria in your mouth alone.
2. (1:09) It would take \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of them laying end to end to equal just a centimeter.
3. (1:41) Bacteria are the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ organisms and they can be found (name 2 places) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
4. (2:11) Your body is made up of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of cells.
5. (2:11) The word bacterium is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ form of bacteria.
6. (3:09) Bacteria’s hereditary material is located within the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
7. (3:30) The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is what gives bacteria it’s shape and help protect it.
8. (3:56) Some bacteria have a whip like structure called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ to propel it through liquid.
9. (5:00) Some cells reproduce very quickly, sometimes every \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
10. (6:22) A wax like mass called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is made up of trillions of bacteria.
11. ( 6:48) Some bacteria are brightly colored due to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ found in their body.
12. (7:20) Freezing and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ will kill nearly all bacteria.
13. (8:40) Bacteria eat just about any \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ matter.
14. (9:40) Without bacteria, many forms of life might not be able to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
15. (10:40) Many cities use bacteria to help break down \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
16. (12:15) Bacteria can digest oil into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ substances.
17. (13:07) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ blood cells help protect us from bacteria.
18. (14:40) In the 1900’s Alexander Fleming discovered a powerful drug called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, which weakens the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of bacteria, causing them to explode as they grow in size.
19. (15:36) Scientists create better medicines and new and useful products by altering the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ code.
20. (17:00) Most scientists thing the risk of genetic engineering of bacteria harming humans is \_\_\_\_\_\_\_\_\_\_.
21. (18:00) Every bacterium is surrounded by one or more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ layers.

***In Conclusion -*** It is a good thing that vast majority of bacteria are harmless, and most benefit humans, because bacteria will always be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

# Life Science: Viruses Movie

# Discussion Questions

• What is a virus, and how does it reproduce?

• How does the body fight a virus? What are antibodies?

• What was Edward Jenner’s discovery, and how did it lead to the development of vaccines?

• How does a vaccine work?

• Who invented the polio vaccine—the first vaccine that didn’t make people sick?

• How can new viruses emerge?

• What viral disease affects one in 100 people between the ages of 15 and 49 and is especially prevalent in Africa?

• What is one way new viruses are being monitored and controlled?

**Virus, Bacteria,**

**or both???**

Fill in the space below on hints you are given. The first one is done for you.

|  |  |  |
| --- | --- | --- |
|  | **Hint** | **Virus, Bacteria, or Both ???** |
|  | Can use flagella to move. | Bacteria |
|  | 5 billion can fit in a drop of blood. |  |
|  | Are one celled. |  |
|  | Can only live in a cell that is used as a host. |  |
|  | Vaccinations work against these. |  |
|  | Does not have a nucleus. |  |
|  | Can be grouped by the type of disease they cause. |  |
|  | There are more of these on earth than all other living things combined. |  |
|  | Reproduce by binary fission. |  |
|  | Chickenpox is caused by this. |  |
|  | Antibiotics do not work on these. |  |
|  | Can sometimes form an endospore. |  |
|  | Sometimes are used in bioremediation. |  |
|  | Are classified in the way they get food. |  |
|  | These go through the lytic cycle. |  |
|  | Some of these can make their own food. |  |
|  | These do not eat, grow, or break down food. |  |
|  | These help fix Nitrogen for plants |  |
|  | Cause many of the food spoilage problems. |  |
|  | Many antibiotics are made by these. |  |

\*BONUS: Which of the 2 pictures above is a virus? How can you tell?

**Study Guide – Bacteria and Viruses**

This contains most, *but not all* of the concepts and vocabulary. Review your film notes, fill in notes, vocab and class materials to also study.

|  |  |
| --- | --- |
| List ways bacteria are helpful (and examples of each – come up with a minimum of 3!) |  |
| How do viruses multiply? |  |
| What are pathogenetic bacteria? |  |
| How do we make antibiotics? |  |
| Cleaning up hazardous wastes like oil spills with bacteria is called? |  |
| These can only reproduce within a hosts’ cell – what are they? |  |
| What is a type of medicine that stops viruses from reproducing? |  |
| 3 shapes of bacteria and what they look like (draw them and name them) |  |
| A cell without a nucleus is called: |  |
| Insulin is made by these |  |
| Bacteria can be engineered to make:  (list as many as you can) | 1. 4.  2. 5.  3. 6. |
| An example of using bacteria to fight other bacteria |  |
| Process of plants converting nitrogen to a form plants can use |  |
| Bacteria that contain chlorophyll |  |
| These live in extreme environments |  |
| Ways Archaea and bacteria are different |  |
| Flamingos get their pink color from this |  |
| One way to prevent viral infections |  |
| All bacteria are made of \_\_\_\_\_\_ cell |  |
| Describe the 4 stages of the **lytic cycle**? |  |
| What is the first stage of the **binary fission**? |  |
| What is the second stage of the **binary fission**? |  |
| What is the third stage of the **binary fission**? |  |
| What is the fourth stage of the **binary fission**? |  |
| Hair like parts that move bacteria |  |
| Cells that have a nucleus |  |
| Differences between eukaryotes and prokaryotes: |  |
| 5 ways viruses NOT like living things? |  |
| How ARE viruses like living things? |  |
| 2 types of genetic material in viruses |  |
| Scientists don’t know how many types of viruses exist because: |  |
| How are the lytic and lysogenetic cycle different in viruses? |  |
| Prokaryotes reproduce by |  |
| Bacteria can infect:  (List 3 organisms!) |  |
| bioremediation - What is it and give an example. |  |
| antibiotic - What is it and what does it do? |  |
| pathogenetic bacteria – What do they do? |  |
| genetic engineering – What is it and give an example. |  |
| binary fission – What goes through this process and describe the process. |  |
| Endospore – Describe what it is. |  |

In the space below, organize your notes in the best way that you’ll remember the material you’re having difficulty with: