

Name _____

Infectious Disease:

Causes and Prevention

Objective #3: The students will be able to identify one or more infectious diseases and their cause(s). The students will be able to list at least 3 ways that infectious diseases can be prevented.



You get to be a Mysterious Disease Detective!

Now you can complete the “Disease Detective Series”! You can be a disease detective and solve science mysteries! HAVE FUN! PUT YOUR THINKING CAP ON!

FIRST...you will read the informational sheets so that you can get all the clues to solve the mysteries.

SECOND...you will solve some mysterious disease cases on your own using all the clues and your informational sheets.

THIRD...you will share your findings with other sleuths in the classroom and find out if your solution about the mysterious disease was correct.

FOURTH...your classmates will ALL discuss the “cases”.

THE DISEASE DETECTIVE SERIES

Solve the Case of the Mysterious Disease

Learning about the bacteria and viruses that cause infectious diseases and how to prevent them



Who are the Suspects?

What are the Cases?

Can you solve the mystery and prevent the disease?



Suspect #1

Lyme Disease



Borrelia burgdorferi



Deer Tick



Lyme disease “bull’s eye” rash

Background:

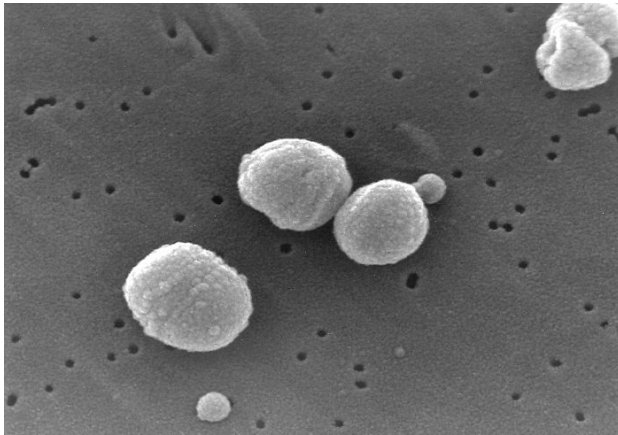
Lyme disease is caused by a spirochete-shaped bacteria called *Borrelia burgdorferi*. *Borrelia burgdorferi* lives in the gut of a tick and can be **transmitted** (passed) to a person if a **tick** that has *Borrelia burgdorferi* bites them. *Borrelia burgdorferi* infection in people leads to Lyme disease.

The natural **host** for Lyme disease is a deer. A tick is considered a **vector** for Lyme disease because it passes the disease from deer to people. Ticks that bite deer are called **deer ticks** (not all ticks are deer ticks). A deer tick is special type of tick that travels and feeds off of deer in the forest. *Borrelia burgdorferi* bacteria are found in both deer and deer ticks, but Lyme disease only occurs in people. The size of a deer tick is so small that it would fit in the period at the end of this sentence.

The infected person may get a fever, headache, or a **“bull’s eye” skin rash**. If left untreated, the infection can spread to joints, the heart, and the nervous system. Medical tests can determine whether or not someone is infected with Lyme disease and the disease can be treated successfully with a few weeks of **antibiotics**. Steps to prevent Lyme disease include using insect repellent with DEET and looking for ticks after you have been in a wooded area.

Suspect #2

Strep Throat



Streptococcus pyogenes



**A throat infected with
*Streptococcus pyogenes***

Background:

Strep throat is caused by the cocci-shaped bacteria *Streptococcus pyogenes*.

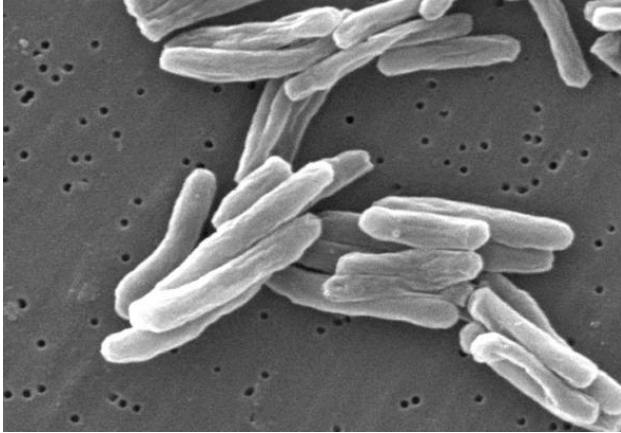
Streptococcus pyogenes infects the inside of the throat, making it feel very sore for several days. Not all sore throats are caused by *Streptococcus pyogenes*. Some of the **symptoms** of Strep throat are a painful, sore throat, high fever, chills, headache, and muscle aches. A quick medical test, called a throat culture, can determine whether or not a person is infected with Strep throat. The treatment for Strep throat is **antibiotics**. If left untreated, Strep throat symptoms may get worse and lead to more serious illnesses.

Streptococcus pyogenes bacteria are put into the air when a person with Strep throat coughs or sneezes. Strep throat is **transmitted directly** from person to person by coughing, sneezing, and close contact. Strep throat is spread through the air from person to person by them breathing in the bacteria, and becoming infected. Although anyone can become infected with Strep throat, it is most common in school-age children. Some of the common ways to prevent spreading Strep throat are covering your mouth when you cough or sneeze and washing your hands after sneezing.

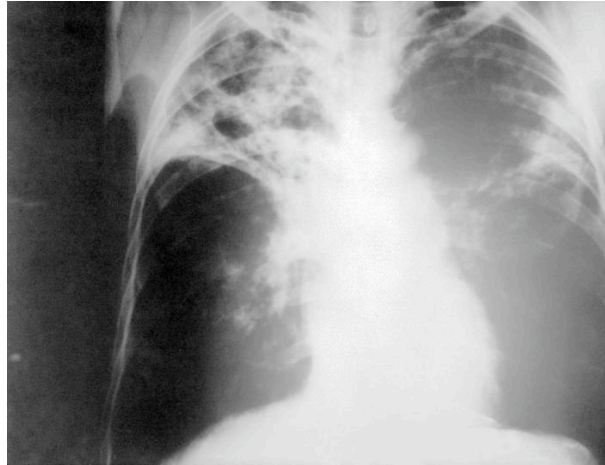
Suspect #3



Tuberculosis



Mycobacterium tuberculosis



Lungs infected by Tuberculosis

Background:

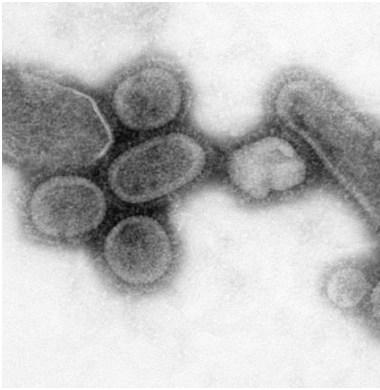
Tuberculosis is a disease caused by bacilli-shaped bacteria called *Mycobacterium tuberculosis*. *Mycobacterium tuberculosis* bacteria are put into the air when a person with Tuberculosis of the lungs coughs or sneezes. Tuberculosis is **transmitted** (spread) through the air from person to person by them breathing in the bacteria, and then becoming infected.

Mycobacterium tuberculosis usually causes infection in the lungs, but if left untreated, it can also infect the kidney, spine, and brain. **Symptoms** of Tuberculosis may include a bad cough (lasting 3 weeks or longer), pain in the chest, and coughing up blood. Medical tests can determine whether or not a person has Tuberculosis and infected people can be treated with antibiotics. Some common ways to prevent spreading Tuberculosis are covering your mouth when you cough or sneeze and washing your hands after sneezing.



Suspect #4

Influenza



Influenza viruses



Sneezing Influenza Viruses into the Air



Getting an Influenza vaccine

Background:

Influenza (also called the Flu) is caused by **Influenza viruses**. Influenza is a **contagious** illness that can be spread from person to person in droplets that are coughed or sneezed out from an infected person. Influenza virus can also be spread when infected people cough or sneeze on something (like a desk) and a **noninfected** person touches it and touches their mouth or nose.

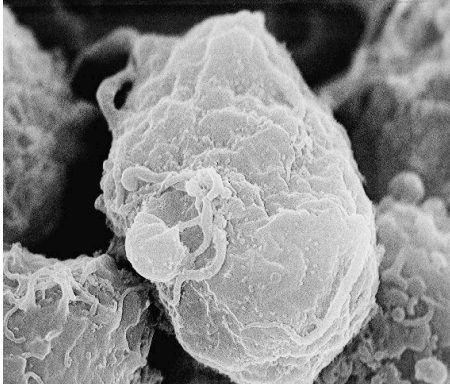
Symptoms of Influenza include high fever, headache, dry cough, sore throat, upset stomach, and feeling very tired. Influenza can lead to more serious illnesses, such as breathing problems and ear infections. Most people can infect others beginning 1 day **BEFORE** symptoms develop and up to 5 days after becoming sick. That means that you can pass on Influenza to someone else before you know you are sick, as well as while you are sick.

The best way to prevent Influenza infection is to get an Influenza **vaccination** every year in the fall. Vaccination allows the body to get a **vaccine** against the Influenza virus. This vaccine contains **inactivated** (killed) virus that is given with a needle. This vaccine helps the body to know what Influenza looks like, so that the body will be able to attack the Influenza virus if you become infected. This type of vaccine is only helpful to your body for one year because there is a new type of Influenza each year. It is important that you get the vaccine in the fall of **EVERY** year.

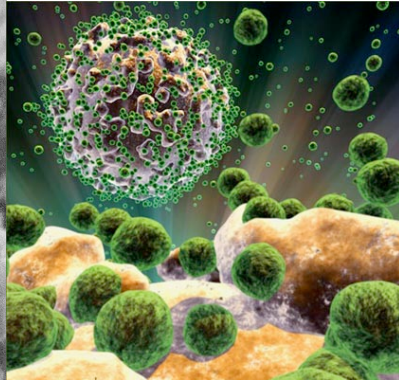
Suspect #5



AIDS



HIV viruses



**HIV viruses
infecting the body**



AIDS Medicine

Background:

AIDS (Acquired Immunodeficiency Syndrome) is a disease that is caused by infection of **HIV (Human Immunodeficiency Virus)**. HIV disrupts the body's ability to fight off infection and keep the body healthy. Instead, people infected with HIV can become very sick or die from many diseases that a healthy person would not ever get sick from.

AIDS can only be spread directly by infected blood, by sharing needles and syringes with an infected person or by infected bodily fluids. AIDS is NOT spread by indirect contact, such as sneezing, shaking hands, hugging, or being in the same classroom with someone who is infected.

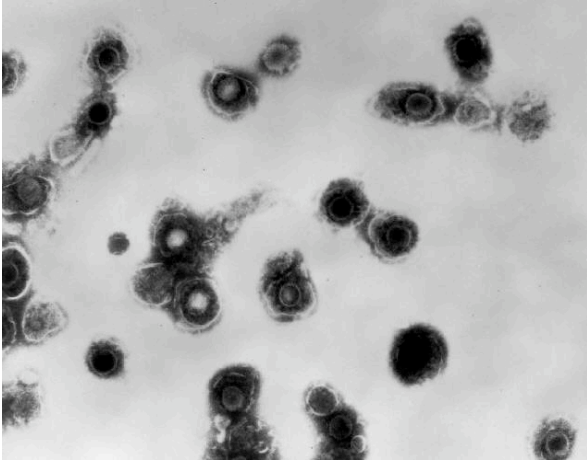
Early **symptoms** for AIDS include high fever, headache, dry cough, sore throat, upset stomach, and feeling very tired. AIDS symptoms may not occur until several years after infection. That means that you can pass on AIDS to someone else before you know you are sick, as well as while you are sick. Medical tests can determine whether or not you have AIDS. Some medicines can slow the course of AIDS, but there is NOT a **vaccine** or cure for AIDS. To prevent getting AIDS, do not touch used needles, do not touch other people's blood, and keep band-aids on your cuts and scrapes.

Suspect #6



Chickenpox

Varicella-zoster virus



**Blister-like rash
caused by Chickenpox**

Background:

Chickenpox is a disease caused by infection with the **Varicella-zoster virus**. Chickenpox is highly **contagious** and spreads from person to person by direct contact or through the air from an infected person's coughing or sneezing. A person with Chickenpox is contagious 1-2 days before the rash appears and until all blisters are gone. It takes from 10-21 days after contact with an infected person for someone to develop Chickenpox. Once a person has been sick with Chickenpox, they are **immune** to it for the rest of their lives. Being immune means that you can no longer become infected.

Symptoms of Chickenpox include a **blister-like rash**, itching, tiredness, and fever. First the rash appears on the chest, back, and face, but it can spread over the entire body causing between 250 to 500 itchy blisters. It is important to stay home from school when you have Chickenpox until the blisters are gone, so that you do not spread it to other people. Most cases of Chickenpox occur in people less than 15 years old. The best way to prevent Chickenpox is to get a Chickenpox **vaccination**. Vaccination allows the body to get a **vaccine** against the Varicella-zoster virus. One vaccination will prevent you from getting sick from Chickenpox for your entire life.

Teacher Copy

Case of the Mysterious Disease Answers



Case #1

Mark has a high fever and an upset stomach. Mark always eats lunch with his friend Steve, who was coughing a few days ago and is now staying home sick from school. Mark's teacher asked him if he had a vaccination this year, but Mark does not remember getting any shots in the last few years.

Which disease does Mark have? Influenza

How is this disease spread? Coughing, sneezing, person to person, droplet form

What evidence do you have for your conclusion? Mark has a high fever, upset stomach, eats lunch with sick friend Steve, and did not get an Influenza vaccination.

Is this disease caused by bacteria or a virus? A virus

What is the name of the bacteria or virus? The Influenza virus

How could this disease have been prevented? Steve covers his mouth when he coughs, washes his hands, gets an Influenza vaccine, and/or stays home from school sooner. Mark washes his hands, stays healthy, and/or gets his Influenza vaccine.

Case #2

Soma has just returned from a family camping vacation in the woods and she has been having headaches for the past few days. Soma has a circular rash near her ankle. She has been vaccinated against the varicella-zoster virus.

Which disease does Soma have? Lyme disease

How is this disease spread? From deer to a deer tick to a person; the deer tick is a vector

What evidence do you have for your conclusion? Soma was in a wooded area, where deer ticks and deer live. She has been having headaches and has the bulls-eye rash.

Is this disease caused by bacteria or a virus? Bacteria

What is the name of the bacteria or virus? Borrelia burgdorferi, spirochete

How could this disease have been prevented? Soma should have worn insect repellent with DEET and checked herself for deer ticks.

Case #3

Tyron has a sore throat and chills. Many of Tyron's friends from school are home sick and are taking antibiotics. Tyron's school nurse suggests that he get a throat culture, but Tyron insists that he already got an Influenza vaccine.

Which disease does Tyron have? Strep Throat

How is this disease spread? Coughing, sneezing, or close contact, through the air, person to person

What evidence do you have for your conclusion? Tyron has a sore throat and chills. His friends are sick and taking antibiotics (from bacterial infections). The nurse suggests a throat culture, which is the test for Strep throat.

Is this disease caused by bacteria or a virus? Bacteria, bacilli

What is the name of the bacteria or virus? Streptococcus pyogenes

How could this disease have been prevented? Hard to prevent, but Tyron should have made sure to wash his hands, stay healthy, and listen to the school nurse.

Case #4

Jing is a new student in school—she has only been there for 30 days. She used to be home-schooled, so she hasn't been around very many other students her age before. Jing has had a high fever and has been feeling very tired for days. Her mom tells her to stay home from school. The next day, Jing sees very small, red blisters on her face. Jing has never been vaccinated for anything.

Which disease does Jing have? Chickenpox

How is this disease spread? Coughing, sneezing, or close contact, through the air, person to person

What evidence do you have for your conclusion? Jing has no immunity against Chickenpox because she has not been in contact with other students before now. She has a fever, tiredness, and is developing blisters characteristic of Chickenpox. Also, she has not been vaccinated against Chickenpox.

Is this disease caused by bacteria or a virus? virus

What is the name of the bacteria or virus? Varicella-zoster virus

How could this disease have been prevented? Jing should have gotten a vaccination against Chickenpox

EXTRA CREDIT

- 1) What is a **vector**? A vector is something that passes something (a disease) from one thing (a deer) to another (a person).
- 2) What does **inactivated** mean? Inactivated means not active or killed. Such as an inactivated virus for a vaccine.
- 3) How does a **vaccine** help your body? A vaccine helps the body to recognize the disease faster so that the body can attack or kill it, so you don't get infected or sick.
- 4) What does **HIV** stand for? HIV stands for Human Immunodeficiency Virus. HIV hurts the immune system by weakening it so that it is more difficult for it to fight off disease.
- 5) What does **transmitted** mean? to pass or spread something
- 6) What are **symptoms**? signs or indications of the presence of something (a disease)



List of Bold Terms

Lyme disease
Borrelia burgdorferi
Transmitted
Host
Vector
Deer tick
Bulls eye skin rash
Antibiotics

Strep Throat
Streptococcus pyogenes
Symptoms
Antibiotics
Transmitted directly

Tuberculosis
Mycobacterium tuberculosis
Transmitted
Symptoms

Influenza
Influenza virus
Contagious
Noninfected
Symptoms
Vaccination
Vaccine

AIDS
HIV
Symptoms
Vaccine

Chickenpox
Varicella-zoster virus
Immune
Symptoms
Blister-like rash
Vaccination
vaccine

Teacher Instructions

How Do Viruses Spread?

Remember that HIV spreads differently from most other viruses. The viruses that cause colds, flu, and many other diseases can travel through the air. When a person with a cold cough or sneezes, viruses spray into the air. These viruses can be breathed in by other people nearby.

People can also pick up the viruses by drinking from the same soft drink can as an infected person or even by touching a telephone or a dish that an infected person has just used. Remember, you can also catch the viruses that cause colds or flu just by being around someone who has these diseases. To show how some viruses can travel through the air; try the Experiment in your classroom.

EXPERIMENT:

- 1. What you need:** Fill a spray bottle with water. The liquid in the bottle represents cold or flu viruses.
- 2. What you do:** Turn the nozzle of the bottle so it faces a chalkboard or window. Be sure the spray is not directed toward anyone. Spray some of the water on the chalkboard or window.
- 3. What it means:** Did you see the spray coming from the bottle? Cold and flu viruses spray into the air in a similar way when a person with a cold or flu sneezes or coughs. If someone nearby breathes in the viruses, they may make the person sick.

Look at the wet marks on the chalkboard or window. The moisture represents the viruses that land on nearby surfaces when an infected person sneezes or coughs. If a healthy person touches a surface that contains the viruses and then touches his or her eyes, nose, or mouth, the viruses can enter the healthy person's body. That person may then get a cold or flu.

Infectious Disease Learning Packet 3

1. You have completed the experiment on “How Do Viruses Spread?” Keeping this experiment in mind, answer the following questions.

A. How can a person with a cold or flu avoid spreading viruses? List at LEAST three ways and describe them thoroughly. wash hands, covering coughs and sneezes, staying home from school when sick, use tissues, take over-the-counter medicine to treat symptoms (cough less etc.)

B. How can a healthy person keep from getting cold or flu viruses? List at LEAST three ways and describe them thoroughly. vaccinations, vaccines, wash hands, covering coughs and sneezes, staying home from school when sick, use tissues

C. Describe how cold or flu viruses are spread differently from HIV. flu and cold viruses are spread through the air and infectious droplets from sneezing or coughing, while HIV is only spread through bodily fluids and blood.

Teacher Instructions

HIV Spreads Through Blood

HIV cannot live for long in the air or on objects. HIV is passed from person to person through blood or certain body fluids. Sharing IV drug needles is one way HIV can be passed from person to person. Experiment 2 shows how that might happen.

Experiment 2:

What you need:

Get two small jars with covers. Fill one with clean mineral or vegetable oil and the other with oil with green food coloring in it. You'll also need a medicine dropper, labels, and a marking pen. The clear oil represents clean blood. The oil with green food coloring in it represents blood-containing HIV. The medicine dropper represents an IV needle.

What you do:

1. Label the jar containing green food coloring "HIV-infected blood".
2. Fill the medicine dropper with the oil containing the green food coloring.
3. Squirt the contents of the dropper back into the clear oil jar. This oil should now contain some of the green food coloring.
4. Label the second jar "newly infected blood".

What it means:

When IV drug users share needles, blood-containing viruses (food coloring) from a person with HIV is left in the needle (medicine dropper) and is injected into the blood of the next IV drug user. Then that person is infected with HIV. Just as the green coloring cannot be removed from the oil, HIV cannot be removed from the infected person's body.

Infectious Disease Learning Packet 3

2. You have completed the experiment on how HIV spreads through blood, so now you can answer these questions successfully.

A. How can a person infected with HIV avoid passing the virus to others? _____ keep cuts and scrapes covered with band-aids, do not share needles, blood, or bodily fluids with others.

B. How can a healthy person avoid getting HIV? _____ keep cuts and scrapes covered with band-aids, do not share needles, blood, or bodily fluids with people that have HIV/AIDS.

Hint: When IV drug users share needles, blood-containing viruses (food coloring), from a person with HIV is left in the needle (medicine dropper) and is injected into the blood of the next IV drug user. Then that person is infected with HIV. Just as the green coloring cannot be removed from the oil, HIV cannot be removed from the infected person's body.

Teacher Instructions

Activity: "Wet-Wipe Clean Up" (5-10 minutes)¹

We seldom think about the countless, unseen microscopic organisms that live in, on, and around us. Though many are beneficial, some can cause infectious diseases. To begin this lesson, students participate in reducing pathogens in their surroundings using wet-wipes.

- 1) Distribute one wet wipe to each student.
 - 2) Ask students to wipe the working surface area in front of them, such as the desk/table top, door knobs, and hand rails.
 - 3) Have students hold up their wet wipes showing them to the rest of the class.
3. You have completed the "Wet-Wipe Clean Up" experiment. Hopefully, now you will think about the countless, unseen microscopic organisms that live in, on, and around us. Though many are beneficial, some can cause infectious diseases. Answer the following questions using good, complete, and scientific answers.
- A. Describe what your wet wipe looks like. Did you realize your working area was this dirty? Explain. Looks dirty
 - B. Not all dirt contains harmful pathogens, but what can you do to reduce the possibility of transferring some of the harmful ones? Explain. keep your area clean, you're your desk, wash hands
 - C. Do the pathogens we found stay here on your desk all day, or do they travel with you? If so, where do they go? Explain. They could either stay with you or stay on your desk. If they go with you, they could be on your clothes or if you touch your eyes, nose, or mouth, they could infect, there are many things that they could do.

¹ Howard, E. and D. Nozicka. (November 2000). From Life Savers to Glitter: Interactive Activities to Teach About Infectious Disease. *American School Health Association*, Vol. 70(9): 385-386.

Teacher Instructions

Activity: "Not So Life Saving" (15-20 minutes)²

Though we come in contact with numerous pathogens daily, they do not always cause disease. Transmission of disease is easy, but we can protect ourselves. Using different colors of Life Savers, students will discover the ease of disease transmission, learn that not everyone becomes infected, and discuss ways to protect themselves.

1) Distribute a sealed envelope containing one Life Saver to each student. For an average class size of 25, include one envelope containing a green Life Saver (representing a disease, ie, the flu), one containing an orange life-saver (representing another disease, ie, chicken pox), five containing a red Life Saver (representing protection, ie, hand washing), and 18 containing a white Life Saver (representing a student being free from disease when entering the classroom). Ask students not to open the envelopes.

2) Ask students to mingle around the room getting three signatures on their unopened envelope from other students.

3) Once students have obtained three signatures and are back in their seats, ask them to open the envelopes.

4) Ask for the student with the green Life Saver to stand and read the list of signatures on his or her envelope. Ask those students to stand. Announce that the green Life Saver represents an illness and that the three people now standing with the person holding the green Life Saver have come in contact with that disease. If those students have a red lifesaver, they were protected and may sit down since they did not acquire the illness. If they have a white Life Saver, ask them to remain standing. They were free from disease when they entered the room, but they have now acquired the disease. Ask the students left

² Howard, E. and D. Nozicka. (November 2000). From Life Savers to Glitter: Interactive Activities to Teach About Infectious Disease. *American School Health Association, Vol. 70(9): 385-386.*

standing with white Life Savers to read their list of names. Have those students stand and read their list of names.

5) Continue this activity as long as desired. You may discover the orange Life Saver, the second disease, through the students reading names, or you can ask the student with this color to stand and begin the process again.

4. After doing the “Not So Life Saving” experiment, we learned that we come in contact with numerous pathogens daily, but they do not always cause disease. Transmission of disease is easy, but we can protect ourselves. Answer the following questions using good, complete sentences.

A. How easy is it to come into contact with a pathogen and not know it? _____ very easy

B. Do we always acquire the illness when we come in contact with the pathogen that causes it?

_____ No

C. What are some ways we can protect ourselves? Be specific and explain thoroughly. _____

vaccinations, vaccines, wash hands, covering coughs and sneezes, staying home from school when sick, use tissues

Preventing Disease is the Key

Elementary school students can do a lot of things to help prevent the spread of infectious disease. One of the most important things that everyone can do is to **keep themselves healthy** so that your body is able to fight off infection better. Make sure that you have **proper nutrition, drink lots of water, get adequate amounts of sleep, and exercise regularly.**

You can help to prevent the spread of disease by **using a tissue** when you have a cold, cough, or you sneeze. It is very important that you **throw the tissue away** right after you use it, to prevent others from touching it and also becoming sick. Make sure to carefully and thoroughly **wash your hands with soap and water** (it should take you longer than singing the “Happy Birthday” song). Remember that if you are ill, you **should stay home from school, drink lots of water, and get lots of sleep**, so that you body can fight off the disease.

Many people work to help make the population healthier. **Scientists** study and experiment to find the causes and vaccines for infectious diseases. **Doctors** and **nurses** help us to recover from infectious diseases by giving us medicine and helpful advice. **Public health workers** watch over the entire population of people, solving mysteries of disease.

1. List at least three things that you can do to keep yourself healthy?

1. proper nutrition
2. drink lots of water/stay home from school when ill
3. exercise regularly/adequate amounts of sleep/wash hands

2. List at least three things that you can do to prevent yourself from getting infectious disease?

1. proper nutrition
2. drink lots of water/stay home from school when ill
3. exercise regularly/adequate amounts of sleep/wash hands

3. What are at least three things that you should you do when you have a cold?

1. drink lots of water/use tissue for sneezing, colds, and coughs
2. stay home from school when ill
3. lots of sleep/wash hands

4. List three people who help us to prevent infectious diseases?

1. doctors
2. nurses
3. public health workers/scientists

Incredible Infectious Disease Activities

Your teacher will tell you which of the following activities are required and which ones are extra credit. Have fun!

1. Do the Infectious Disease Word Find #2 and/or #3.
2. Do the Infectious Disease Crossword Puzzle #2 and/or #3.
3. Design/build/create 3-D bacteria, fungi, and/or virus from materials that you have at home. Use some of the realistic photos that you have in your packet or use some of the colored photos that your teacher has displayed in your classroom.
4. Make an informational poster to show how you can keep healthy. Be neat, creative, and color carefully! Perhaps you will be able to display your poster in your school.
5. Make an informational poster to show why it is SO important to wash your hands. Be sure to give some “tips on hand washing” that you have learned in this unit.
6. Write a play, song, poem or an acrostic about hand washing and its importance in preventing infectious disease.
7. Make a poster to show some ways that each student can help to prevent the spread of infectious diseases in the home, school, and community. Be creative, neat, and be sure to give good information to those that read your poster.

Infectious Disease Word Find #2

Y X S N E G O H T A P S S B I
G C J P X S N L D R N O N A L
F U N G I S A K U O L M O C L
B C V R A R F E I Y E Y I T I
J C C F R R O T S C V C T E C
F J C Q O Q A C R I G O A R A
S M V T H N L M H E D C L I B
J W C I I B I K R E W C U A J
A E Q C R C D M V Y T I C C L
V K C A R U S M O M V E O M N
U A L O D I S F Y M A I N E I
V D B M Q N C C Q J F C I W D
Q E U B B U V V L V K B Z Q X
S G P Q P F B M O A J H E J A
I N F E C T I O U S Q L T Q S

BACILLI
DISEASE
INFECTIOUS
PATHOGEN
VECTOR

BACTERIA
FUNGI
INOCULATIONS
SPIROCHETE
VIRUS

COCCI
GERMS
MICROBES
VACCINATIONS

Infectious Disease Word Find #2 Solution

E + + + + T + + A + R + + T +
A Y V + + + I I + I A + + I +
+ Z E A + S D C M + S + A M +
+ + N + C S L M K C H + N S +
T U B E R C U L O S I S T N T
+ + + + U N I N U S + + I A H
+ + + + E L T N M B E + B R R
+ + + + + A F O E + M + I T O
+ + + T G + T N + + Y + O + A
+ + S I + P + + I + L + T + T
+ O O + M + + P E R T S I + +
H U + Y V I H + D E E R C + +
S + S + + + + + + + + S + +
X O P N E K C I H C + + + + +
D I S E A S E + + + + + + + +

(Over, Down, Direction)

- AIDS (9, 1, SW)
- ANTIBIOTICS (13, 3, S)
- BULLS (10, 7, NW)
- CHICKENPOX (10, 14, W)
- CONTAGIOUS (10, 4, SW)
- DEER (9, 12, E)
- DISEASE (1, 15, E)
- EYE (3, 3, NW)
- HIV (7, 12, W)
- HOST (1, 12, NE)
- IMMUNE (10, 2, SW)
- INFLUENZA (9, 10, NW)
- LYME (11, 10, N)
- RASH (11, 1, S)
- STREP (12, 11, W)
- SYMPTOMS (3, 13, NE)
- THROAT (15, 5, S)
- TICK (6, 1, SE)
- TRANSMIT (14, 8, N)
- TUBERCULOSIS (1, 5, E)
- VACCINE (3, 2, SE)

Infectious Disease Word Find #3

B E T X H D J S S C H D S T P
S U G T W A Y N L X L E U U T
Q C L V R M W E O Y Q E O B S
Q K I L P A A P M W Y R I E O
S L U T S W N E Y Z N T G R H
W B O A O E D S H I V I A C U
Y M A L K I Y E M U J C T U S
S U T C S A B E N I R K N L N
X O I E F T Z I R U T O O O X
V H A L Z C S N T A M Z C S Z
C S E N I C C A V N S M A I Z
E I N F L U E N Z A A H I S N
T A O R H T P E R T S O D U P
B B G O P S W F N N D I S L A
K L R B C C O D C T A D A X D

AIDS
CHICKENPOX
HIV
INFLUENZA
SYMPTOMS
VACCINE

ANTIBIOTICS
CONTAGIOUS
HOST
LYMEDISEASE
TRANSMIT

BULLSEYERASH
DEERTICK
IMMUNE
STREPTHOAT
TUBERCULOSIS

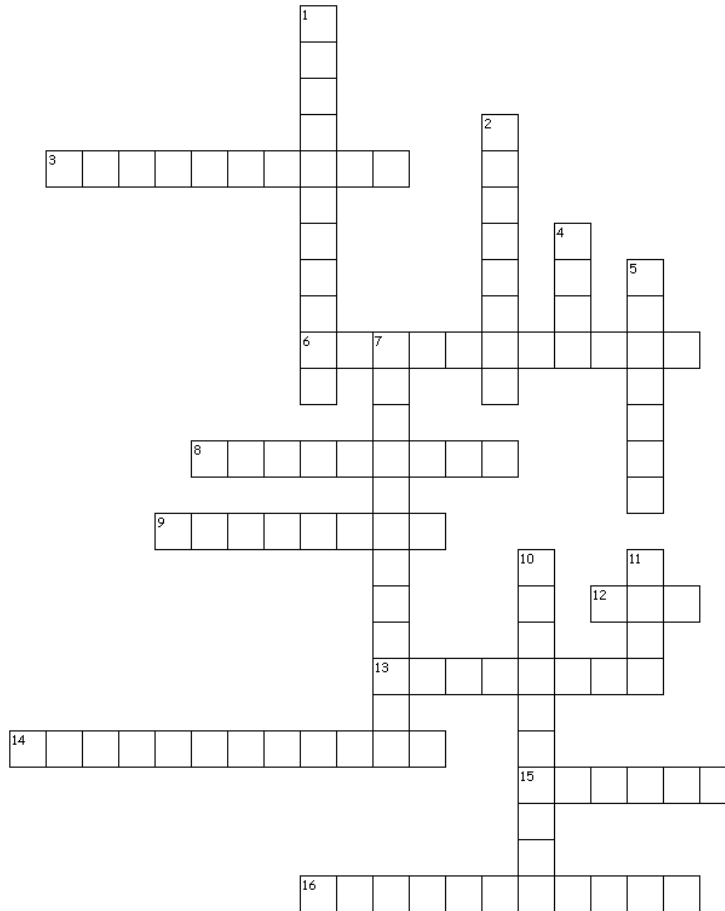
Infectious Disease Word Find #3 Solution

+ S + I + + + + A + + + B + I
+ U + + G + + I + + + A + N +
+ R + S + N R + + + C + O + +
+ I + + U E U + + I + C + + +
E V + + T O + F L + U + + + +
T P + C + + I L + L + + + + +
E + A S N O I T A N I C C A V
H B + T + + + T C + + + + D +
C + + + H + I + + E + + + I +
O M I C R O B E S + F + + S +
R + + + N + G + + I + N + E +
I + + S + + + E C + + + I A +
P R O T C E V C N + + + + S +
S G E R M S O + + + + + E +
+ + + + + C + + + + + + + +

(Over, Down, Direction)

- BACILLI (13, 1, SW)
- BACTERIA (2, 8, NE)
- COCCI (6, 15, NE)
- DISEASE (14, 8, S)
- FUNGI (8, 5, NW)
- GERMS (2, 14, E)
- INFECTIOUS (13, 12, NW)
- INOCULATIONS (15, 1, SW)
- MICROBES (2, 10, E)
- PATHOGEN (2, 6, SE)
- SPIROCHETE (1, 14, N)
- VACCINATIONS (15, 7, W)
- VECTOR (7, 13, W)
- VIRUS (2, 5, N)

Infectious Disease Crossword Puzzle #2



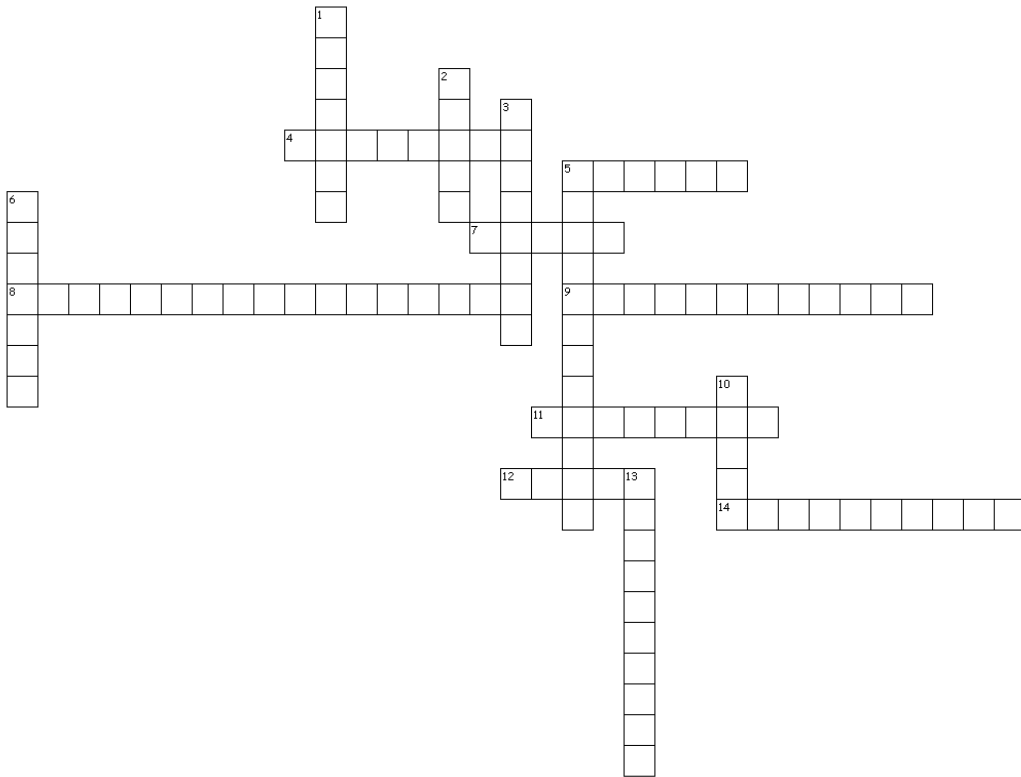
Across

- 3. a disease caused by the Varicella-zoster virus **Chickenpox**
- 6. a substance that is able to kill or inactivate bacteria **Antibiotics**
- 8. a disease caused by the Influenza Virus **Influenza**
- 9. a tick that carries and transmits the bacterium causing Lyme disease **Deer Tick**
- 12. Human Immunodeficiency Virus **HIV**
- 13. signs or indications of the presence of something (a disease) **Symptoms**
- 14. a target-shaped Lyme disease rash **Bulls Eye Rash**
- 15. protected from infection or disease **Immune**
- 16. a disease caused by *Borrelia burgdorferi* **Lyme Disease**

Down

- 1. a disease caused by *Streptococcus pyogenes* **Strep Throat**
- 2. to pass or spread something **Transmit**
- 4. an organism in which a pathogenic microorganism is commonly found **Host**
- 5. inject or introduce a weakened or dead form of a disease-producing pathogen into somebody's body in order to create immunity to the disease **Vaccinate**
- 7. a disease caused by *Mycobacterium tuberculosis* **Tuberculosis**
- 10. easily and quickly spread (a disease from person to person) **Contagious**
- 11. Acquired Immunodeficiency Syndrome **AIDS**

Infectious Disease Crossword Puzzle #3



Across

4. a single-celled microorganism without distinct nuclei or organize cell structures **Bacteria**
5. something that transmits disease-causing microorganisms from an infected organisms to another organism **Vector**
7. a spherically-shaped bacterium **Cocci**
8. harmful conditions that impair normal body function by infections that can be spread **Infectious Disease**
9. injection or introduction a weakened or dead form of a disease-producing pathogen into somebody's body in order to create immunity to the disease **Inoculations**
11. a microscopic organism especially one that transits a disease **Microbes**
12. a single-celled or multi-cellular organism without chlorophyll that reproduces by spores and lives by absorbing nutrients from organic matter **Fungi**
14. a coil-shaped bacterium **Spirochete**

Down

1. a harmful condition that impairs (damages) normal functioning **Disease**
2. an infection particle that lives like a parasite and consists of a nucleic acid core within a protein sheath **Virus**
3. something that causes disease **Pathogen**
5. inoculation with a vaccine to produce immunity **Vaccinations**
6. a rod-shaped bacterium **Bacilli**
10. a microorganism that may or may not cause disease **Germ**s
13. capability of causing and spreading infection **Infectious**