Germs are Everywhere: ELA PreK-2



English Language Arts

Objectives

Students will learn that germs are divided into categories. They will learn more about bacteria, viruses and fungi. Students will practice phonological awareness using the vocabulary words.

Vocabulary

bacteria—very small living things that often cause disease

fungus—a group of living things (such as molds, mushrooms, or yeasts) that often look like plants but have no flowers and that live on dead or decaying things

germ— a very small living thing that causes disease

virus—an extremely small particle that causes a disease and that spreads from one person or animal to another

Background

Germs live everywhere. You can find germs (microbes) in the air; on food, plants and animals; in soil and water — and on just about every other surface, including your body.

Most germs won't harm you. Your immune system protects you against most germs. However, some germs are difficult to fight off because they constantly mutate to breach your immune system's defenses. Viruses like colds and the flu and examples of germs that mutate. We need a new flu shot every year because the virus changes and the antibodies from previous years don't recognize the new strain. Knowing how germs work can increase your chances of staying healthy.

WHAT IS A GERM?

The term "germ" refers to a very small living thing that causes disease. Germs can be viruses, bacteria, or fungi.

Viruses are very small particles that cause a disease. We have all seen illustrations of the COVID-19 virus and heard reports of changes in the number and type of protein spikes as the virus mutates. Not all viruses are spheres, but most viruses have spikes to help them attach to healthy cells in the host organism. Viruses spread from one person or animal to another. Viruses are so simple that they are often not considered alive. Viruses are not able to grow or reproduce on their own. Instead they must take over a host cell to reproduce.

Bacteria are much larger in size and can live anywhere. Bacteria can be spherical, rod-like or curved. There are bacteria in the soil and at the depths of the ocean. They can also be on the surfaces of teeth and in the digestive tracts of humans and animals. Most bacteria do not cause disease. In fact, many bacteria are very helpful to us. There are bacteria that break down trash or clean up oil spills. Bacteria can even be used to make medicines.

Germs are Everywhere (continued)

Fungi are larger, plant-like organisms without chlorophyll. Chlorophyll is what makes plants green and changes sunlight into energy. Since fungi do not have chlorophyll they cannot make food. They have to absorb food from whatever they are growing on. Fungi can be very helpful. Fungi can make bread rise, or break down trash. Penicillin is derived from a naturally occurring mold (fungi) found growing in a petri dish with a bacterial culture. Over time the the mold killed the bacteria. Fungi be harmful if they steal nutrients from another living thing or damage tissue.

Animals carry many germs. Being bitten or scratched by a sick animal can make you sick. You might also become infected by scooping your cat's litter box. You can even get sick by cleaning mouse droppings in your house or garage. The best way to keep this from happening is to wash your hands often.

Disease-causing organisms can also be passed along by indirect contact. Many germs can stay on surfaces, such as a tables, doorknob, or faucet handle. When you touch the same doorknob as someone who is sick, you can pick up the germs he or she left behind. If you then touch your eyes, mouth, or nose before washing your hands, you may become sick.

When you cough or sneeze, you send droplets into the air around you. When you're sick these droplets have the germs that made you sick. Crowded, indoor rooms may increase the chance of droplets being spread. Some germs travel through the air in particles much smaller than droplets. These tiny particles remain in the air for long periods of time. They can travel in the air. If you breathe in an airborne virus, bacteria, or other germ, you may become sick. You will then show signs and symptoms of the disease. The flu, SarS and COVID-19 are contagious diseases often spread through the air.

Another way disease-causing germs can infect you is through food and water. E. coli is a bacteria that can be in some foods, such as hamburger that is not cooked enough. It can also be in unwashed fruits or vegetables due to waste. When you eat foods that have E. coli, you could get an illness, often called food poisoning.

To keep from spreading germs, the CDC says you should:

- 1. Wash your hands often with soap and water for at least 20 seconds especially after you have used the restroom, been in a public place, blown your nose, coughed, or sneezed or handled animals.
- 2. Avoid close contact with people who are sick. If possible, keep 6 feet of space between the person who is sick and yourself. If outside your home, keep 6 feet between you and others.
- 3. Always cover your mouth and nose with a tissue when you cough or sneeze or use the inside of your elbow and do not spit.
- 4. Clean and disinfect surfaces that are touched daily.

Additional Reading

Ben-Barak, Idan, *Do Not Lick This Book*, Roaring Brook Press, 2018.
Berger, Melvin, *Germs Make Me Sick!*, Harper Collins, 2015.
Cline-Ransome, Lesa, *Germs: Fact and Fiction, Friends and Foes*, Henry Holt and Co. 2017.
Dragon, Didi, *Germs vs. Soap*, AHA! Press, 2020.
MacDonald, Alan, *Germs! (Dirty Bertie)*, Capstone Press, 2012.
Marsh, Carole, *A Kid's Official Guide to Germs (Here and Now)*, Gallopade, 2002.
Mould, Steve, *The Bacteria Book: The Big World of Really Tiny Microbes*, DK Children, 2018.
Rooke, Thom, *A Germ's Journey (Follow It)*, Picture Window Books, 2011.
Verdick, Elizabeth, *Germs Are Not for Sharing*, Free Spirit Publishing, 2006.

Websites

https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/talking-with-children.html

https://www.ok.gov/health/County_Health_Departments/Comanche_County_Health_Department/Service s/Communicable_Disease/index.html

https://kidshealth.org/

https://www.aphis.usda.gov/aphis/ourfocus/animalhealth

https://www.ncbi.nlm.nih.gov/books/NBK143061/.

https://www.mayoclinic.org/diseases-conditions/infectious-diseases/in-depth/germs/art-20045289#dialogl d45096456

Grades PreK-2 Teacher Resources and Standards

Activity 2: Good Germs/ Bad Germs, (English Language Arts) 1 50 minute class period

Students will read and learn that germs are everywhere, but not all germs are harmful. Students will learn the difference between harmful and helpful germs.

Oklahoma Academic Standards

Activity 2

Activity 2: Good Germs/ Bad Germs (English Language Arts)

PK.2.PA.3	Students will recognize syllables in spoken words (e.g., pony = po + ny).
K.2.PA.4	Students will count, segment, and blend syllables in spoken words.
1.2.PA.1	Students will count, segment, blend, and delete syllables in spoken words.
PK.3.R.4 K.3.R.4 1.3.R.4	Students will ask and answer basic questions (e.g., who, what, where, and when) about texts during shared reading or other text experiences with guidance and support.
2.3.R.6	Students will locate facts that are clearly stated in an informational text.
PK.4.R.3 K.4.R.3	Students will begin to acquire new vocabulary and relate new words to prior knowledge.
1.4.R.5 2.4.R.5	Students will acquire new academic, content-specific, grade-level vocabulary, relate new words to prior knowledge, and apply vocabulary in new situations.

Materials:

- Activity 1 Teacher Guide "Phonological Awareness"
- "Frayer Model Example"
- Activity 1 Worksheet 1a: "Frayer Model"
- Activity 1 Worksheet 1b: "Frayer Model Pictures"
- Activity 2 Reading Page 1 "What Are Germs?"
- Activity 2 Reading Page 2 "Bacteria"
- Activity 2 Reading Page 3 "Virus"
- Activity 2 Reading Page 4 "Fungi"
- Activity 2 Reading Page 5 "Bacteria, Virus or Fungi"
- Activity 2 Worksheet 2 "Good and Bad Germs"
- Activity 2 Worksheet 3 "Germy Words"
- Crayons or washable markers
- Scissors
- Gluestick

Activity 2- Continued

Procedures

- Read and discuss background information and vocabulary. Using the Activity 1 Worksheet 1a "Frayer Model", discuss each of the vocabulary words with students. Activity 1 Worksheet 1b provides space for younger students to draw pictures to illustrate the word. Use the "Frayer Model Example" for ideas. Have students share their definitions, facts, examples and non-examples for their assigned words.
- 2. Use **"Phonological Awareness" Teacher Guide** to reinforce sounds, syllables and rhyming in vocabulary words.
- 3. Use Reading Pages 1-5 to share information about germs. Have older students read in pairs or read with younger students. Be sure to ask questions to be sure students understand that there are good and bad bacteria and fungi, but no good viruses.

—Activity 1 Reading Page 1 "**What are Germs?**" is a basic overview of germs. While many younger children cannot read the passage, they can discuss as you read to them.

—Activity 2 Reading Page 2 "Bacteria" gives specific information about bacteria.

—Activity 2 Reading Page 3 "Virus" provides basic information about viruses.

—Activity 2 Reading Page 4 "Fungi" gives examples of fungi.

—Activity 2 Reading Page 5 "**Bacteria**, **Virus or Fungi**" can be used with younger students as a follow-up to "What are Germs" or it can be used as summary with older students after reading "**Bacteria**", "**Virus**", and "**Fungi**".

- 4. Activity 1 Worksheet 2 "Good and Bad Germs" has three pages of activities. Based on the age and ability of students, you may use one, two or all three worksheets.
- 5. Activity 2 Worksheet 2 "Germy Words" is designed for younger students.

Germs Are Everywhere Teacher Guide Phonological Awareness



Words - say the word, repeat the word 3 x

Germ Bacteria Virus Fungi (fun- guy) plural of fungus Fungus

Syllables - use duck lips to count syllables

virus(2) bacteria (4) fungus (2) germs (1)

Onset Rime - (use multisensory movement)

germ - (g) (erm) wheat - (wh) (eat) Scan QR code or click video link below to see the PA lesson.



Rhyme - thumbs up if these words rhyme

germ - worm (yes) germ - firm (yes) germ - harm (no)

First Sound Fluency - thumbs up if you hear the same beginning sound

bacteria - basketball bacteria - baseball bacteria - soccer fungus - football fungus - baseball fungus - fantastic

Segmenting - say word, tap the sounds, say word

Germ /j/ /er/ /m/ Virus /v/ /i/ /r/ /u/ /s/ Fungi (fun- guy) /f/ /u/ /n/ /g/ /i/

Frayer Model Example





For more lessons and resources, please visit <u>www.agclassroom.org/ok</u>

Page 7

Germs are Everywhere Activity 1 Worksheet 1a: Frayer Model

Name: _

Date:



、.
3
Ó
Ř
\Box
S
Φ
$\overline{}$
얻
≽
σ
\times
Ð
Ľ
2
C
σ
Ē
σ
ŝ
d)
Ĩ
2
Ξ
5
×
ົ
Ϋ.
σ
Ľ
0
3
~
Ψ
\supset
0
õ
()
0
ts c
icts c
acts c
facts c
n, facts c
on, facts c
tion, facts c
iition, facts c
înition, facts c
efinition, facts c
definition, facts c
definition, facts c
e definition, facts c
the definition, facts c
the definition, facts c
te the definition, facts c
ite the definition, facts c
/rite the definition, facts c
Write the definition, facts c

efinition	Facts or Characteristics
amples	Non-examples

Page 8



Activity 1 Worksheet 1b: Frayer Model Pictures

Name: _

um	
the	
in SS	
Cla Ag	

Date:



For more lessons and resources, please visit <u>www.agclassroom.org/ok</u>

Page 9

Activity 1 Reading Page 1: What Are Germs?

Ag in the Classroom

Name_

Date_

Germs live everywhere.

Germs are so tiny.

You need to use a microscope to see them.

Germs float in the air.

Germs live on food.

Plants have germs.

Animals have germs too.

Germs are in soil and water.

You have germs on your skin.

Germs move when you sneeze or cough.

Germs can go all the way across the room.



Activity 1 Reading Page 1 cont.: What Are Germs?

Name_

Date_

Most germs make you sick.

Your body protects you from many of the bad germs.

You can help too.

- Wash your hands often.
- Cover a cough or sneeze.
- Stay away from sick people.
- Stay home when you are sick.





Activity 1 Reading Page 2: Bacteria

Name_



Bacteria can be good or bad. Good bacteria work in your stomach. They help break down food. They help turn milk into cheese.





Why do you brush your teeth? Bacteria cause cavities. Brushing gets rid of bacteria.

Bad bacteria can make you sick.

Bacteria cause Strep throat and ear infections.

It is good to be careful with your food.

It is bad to let your lunch box get too warm.

Bad bacteria can grow on food.

This will make you sick.



Activity 1 Reading Page 3: Virus

Name_

Date

Viruses are always bad. They need to be inside you to live. Viruses take over the cells they infect. A virus grows by taking over cells.





Animals and plants get viruses, too. A virus can go from:

- one person to another
- one animal to another
- one plant to another

A cold is a virus. You may sneeze or cough when you have a cold. This is your body trying to get rid of the virus. It also spreads the virus.

Sometimes you get a fever.

Your fever is trying to help stop the sickness.

Vaccines are shots from the doctor. They keep us safe from viruses. You get shots for measles, chicken pox, and the flu.





Germs are Everywhere Activity 1 Reading Page 4: Fungi

Name_

Fungi can be good. Some mushrooms are good fungi. You put mushrooms on pizza. Mushrooms taste good.

Yeast is another good fungi. Yeast helps bread grow.

Some mushrooms grow in the wild on dead trees and leaves.

Date

Mushrooms help dead plants break down or decompose.

Some fungi are bad. Athlete's foot is a fungus. Ringworm is also a fungus. Some people get fungus in their toenails.







Activity 1 Reading Page 5: Bacteria, Virus or Fungi



Name__

Date

Bacteria can be good or bad. Good bacteria work in your stomach. They help break down food.

Bad bacteria can make you sick. Bacteria cause cavities in your teeth.





Viruses are always bad. They need to be inside you to live. They take over the cells they infect. That is how a virus grows.

Colds, the flu, and measles are viruses.

Fungi can be good. You put mushrooms on pizza. They taste good.

Some fungi are bad. Athlete's foot is a fungus. Fungi cause Ringworm.



Activity 2 Worksheet 2: Good and Bad Germs page 1

a hal wh



Name: _____

Date: _

Use the reading pages to answer questions.

Circle all of the places where germs live:

Α.	skin	B. soil	C. air
D.	on plants	E. on animals	F. in food

live

Didw dild Laber where gernis live	

Activity 2 Worksheet 2: Good and Bad Germs page 2



Name: _____

Date:

Circle the right answers.

How can you help keep germs from spreading?

- A. Wash your hands with soap and water.
- B. Cover a cough or sneeze.
- C. Go to school when you are sick

Draw pictures

Bacteria	Fungi	Virus

Activity 2 Worksheet 2: Good and Bad Germs page 3



Name: _____

Date: ____

Word Bank

Use the word bank to			
fill in the blanks below.	bacteria	bad	
	fungi	good	
	mushrooms	ringworm	
	vaccines	viruses	

- 1. _____ can be good or bad.
- 2. _____ bacteria in your stomach help digest food.
- 3. _____ bacteria cause strep throat and ear infections.
- 4. _____ are always bad.
- 5. _____ protect us from viruses like measles and chicken pox.
- 6. There are lots of good ______.
- 7. _____taste good on pizza.
- 8. _____ is caused by fungi.

Activity 2 Worksheet 3: Germy Words page 1

Name: _

Ag in the Classroot

Date:

Color the germ pictures



germ—a very small living thing that can make you sick



bacteria—very small living things that often cause disease



virus—a very small particle that causes disease that spreads from one person or animal to another



fungus—living things that may look like plants but have no flowers and live on dead or decaying things

Activity 2 Worksheet 3: Germy Words page 2

Name: _

Ag in the Classroom

Date:

Color the germ pictures and match the word to the picture.









virus

fungus

germ

bacteria

Activity 2 Worksheet 3: Germy Words page 3



