

# GRADE 5 DISEASE PREVENTION UNIT

## LESSON ONE

### Communicable and Non-Communicable Diseases

Estimated delivery time: 50-60 minutes or two 25-30 minute periods

#### **Objectives**

HE.500.70.01	Differentiate between communicable and non-communicable diseases
HE.500.70.01.a	Identify disease-producing agents (bacteria, protozoa, virus, fungi)
HE.500.70.01.b	Identify the modes of transmission (air, touch, food, body fluids)
HE.500.70.04	Analyze personal daily living habits and choices that increase the risk of developing disease
HE.500.70.04.a	List behaviors that increase the risk of developing disease
HE.500.70.04.b	Identify and categorize personal habits into High, Medium, Low risk behaviors

#### **Introduction**

- Say, *"Let's brainstorm: What is disease?"* Record student's ideas. In brainstorming, students will come up with many ideas about disease. Some concepts that you want to discover are that:
  - Disease is caused by bacteria, virus, fungi, protozoa.
  - In fifth grade science, students learn about single celled organisms. You may wish to ask them to reflect on some of their science lessons.
  - Additional background information should have been acquired before fifth grade through personal experience - i.e. illness such as a cold or chicken pox, food poisoning, fungus on bad food items.
- Post the "Disease" definition card on the board or show that slide on the power point. Disease is defined as "an illness or condition that prevents the body from functioning normally."
- Post the "What are some disease causing agents?" card on the board or show that slide on the power point.

#### **Activity #1 - Communicable and Non-Communicable Diseases**

- Say, *"Let's do a quick activity to get us started on today's lesson. I'll need some volunteers."*
- Pass out a disease card to each volunteer.
- Say, *"I have a concept that I would like for you to figure out. As I call each of you to the front of the room, I will have you read the name of the disease and the definition on the back of the card. I will then say, either 'YES' or 'NO', and direct you to go to one, or another area of the room. As we do this activity, I would like for you to try to figure out why the volunteers are grouped in a particular way. Please don't call out your guess. I will ask for your answer as we go through the activity."*
- [Teacher NOTE: You are dividing students into two groups - communicable disease (YES) and non-communicable (NO) – but you are not letting them know this yet. Make sure that the cards are mixed up prior to handing them out]

- Ask one person to stand up and hold up his card so everyone can see it. The volunteer reads the name of the disease and the definition on the back, or show the slides from the power point “Activity #1 Disease Cards.” The teacher then directs the student to move to the appropriate area of the room. For example, "COMMON COLD" would be a "YES" (example of the concept.) Ask this student to move to the front of the room.
- Ask another person to stand up, and hold up his card so everyone can see it. He/she reads the card and the definition and follows the teacher’s direction to one or the other area in the room.
- Continue in this manner as long as you deem necessary. Stop from time to time to ask the participants to raise their hands if they feel they know what the concept is. Hold up the next card and ask those students whether it is a "YES" or a "NO". Confirm or deny their guesses.
- After nearly all participants appear to have guessed the concept, ask someone to name the concept. If correct, stop. If incorrect, keep going.
- Summarize: “So, all the “Yes” cards are communicable diseases and all of the “No” cards are non-communicable diseases. Let’s define these terms.
  - Post the “Communicable Disease” definition card or show the slide from the power point. (A communicable disease is a disease that can be spread from one person or animal to another such as chicken pox, measles, strep throat, common cold.)
  - Post the “Non-Communicable Disease” definition card or show the slide from the power point. (A non-communicable disease is a disease that cannot be passed from one person or animal to another such as heart disease, diabetes and cancer.)
- Continue to process the activity if necessary:
  - *What thoughts did you have when I put up the first yes?*
  - *What thoughts did you have when I put up the first no?*
  - *Did any example throw you off?*
  - *How many of you worked with just one idea?*
  - *How many of you were considering several ideas?*
  - *What was the final clue that helped you understand the concept? Why?*

## **Activity #2 - Spread of Disease**

- Ask, “*How are diseases transmitted?*” (You may need to refer back to the disease cards)
- Record student's ideas. (Diseases are transmitted through the air, by touch, on food, in body fluids.)
- Post the “How Are Diseases Transmitted?” card.
- If students did not answer “by blood,” Say, “*Did you know that disease can also be spread through contact with another person's blood? That's why the dentist wears a mask and uses gloves. That is also why if somebody scrapes their knee on the playground, we always wear gloves when putting on a bandage.*”
- Ask students to raise their hand if they have ever had a cold. Say, “*Most colds are caused by viruses. Viruses are germs that cause disease. Viruses are very tiny and cannot be seen without a microscope. There are hundreds of types of viruses. There are actually over 200*

*types of viruses that can cause the common cold! Other viruses cause the flu, mumps, chicken pox and even polio. Many viruses that cause disease can live in the air or on the surfaces of things around us. You can catch the flu or a cold just by being around someone who has the disease. You can also catch the disease by touching silverware, a glass, or even a tissue that an infected person has used. Most diseases caused by viruses last only a few days or weeks. The body fights off the disease and destroys it. There are not medicines available to cure all viruses. Most medicines can only help with the symptoms. Vaccines however, can prevent some diseases. Years ago polio was a deadly disease caused by a virus. Scientists invented a vaccine to protect against many viruses. You were probably vaccinated for polio, and other diseases like chicken pox, measles and mumps before you started school. This is one of the reasons we don't often hear about epidemics in our country anymore.*

- Post the “Vaccine” definition card or show the slide on the power point.
- Post the “Epidemic” definition card or show the slide on the power point.
  
- *So just how does a virus spread? Many ways... they can travel through the air, in contaminated food or water, or infected body fluids like blood. Let's look at several ways a virus might travel through our classroom."*
  
- Fill a spray bottle with water. Say, “*The liquid in the bottle represents the cold or flu viruses.*” Turn the nozzle so it faces the chalkboard, a counter top or a window. Squeeze the trigger on the bottle and spray some of the water.
- Say, “*Did you see the water coming out of 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, that person may catch a cold or flu.*”
- Say, “*Look at the wet marks (wherever you sprayed).*” “*The moisture represents the viruses that land on nearby surfaces. Even after the moisture has dried some viruses may remain. If a healthy person touches a surface that has the viruses, and then touches his or her eyes, nose, or mouth, the viruses can enter the healthy person's body and make them sick. This is an example of one way that a virus can be transmitted.*”
  
- Process the activity:
  - “*How can a person with a cold or the flu avoid spreading viruses?*” Have students discuss prevention and hygiene techniques such as washing hands well and often, sneezing/coughing into their sleeves, discarding of tissues, etc.
  - “*How can a healthy person keep from getting cold or flu viruses?*” Have students discuss the importance of getting enough sleep, eating in a healthy way, getting enough exercise, not touching used tissues, etc.

### **Activity #3 - Methods Communicable Disease May Be Transmitted**

- Say, “*Let's do another activity. Divide into groups of four. I'd like each group to select a recorder.*”
- Give each group a piece of large paper and colored markers. Ask the recorders to write in the center of the paper, HOW ARE COMMUNICABLE DISEASES PASSED?
- Each group brainstorms answers to the question in the center of the paper. After students have brainstormed on their paper, select a reporter from each group. Use the Carousel

Mapping strategy to create a large chart in front of the class. Rotate to each group letting them give only one of their answers. They should follow along and cross out ideas already given by other groups.

- As they list ways to prevent the spread of disease, check off all the ideas/suggestions with (example: Airborne= cross off sneezing)
- All groups should take time to reread the master list.
- Say, *“Let’s summarize. Can you name at least four ways viruses can travel?”* (Viruses can be airborne, passed through hand to hand contact, sharing items by and infected person, insect or animal bites, contaminated water or food, infected blood or other body fluids.)
- Post the “How are diseases transmitted?” card or show that slide on the power point.
  
- Say, *“Now, I am going to give you one minute to write a statement at the bottom of your list stating one way to help prevent the spread of communicable diseases.”*
  
- Process the activity:
  - Have students share their answers and then determine if the "Prevention" suggested actually helps to reduce the spread of disease. *“Use thumbs up if you agree with the statement, thumbs down if you disagree with the statement. If you disagree, explain your answer.”*
  
- Ask, *“Based on the information you learned from this lesson, do you consider yourself at low, medium, or high risk for getting a communicable disease? Why do you think so?”* In answering why they believe they are at a certain risk level, students should be reinforcing the concept of prevention.

### **Closure of the lesson**

Ask students the following questions:

- *“What is the difference between a communicable and non-communicable disease?”* Refer to the “Communicable Disease” definition card and the “Non-Communicable Disease” definition cards.
- *“What causes communicable disease and how are they transmitted?”*
- *“What should you think about in order to keep from getting a communicable disease?”*
- Say, *“Tomorrow we will continue to learn more about disease.”*

**Activity #1 Communicable and Non-Communicable Disease Cards**  
(also see power point on FCPSTeach)

**COMMON  
COLD**

*COMMON COLD*

- ♦ A respiratory infection caused by any of 200 different viruses.

**ALLERGIES**

*ALLERGIES*

- ♦ Allergies are the reaction of the body to certain substances.

**INFLUENZA  
(FLU)**

*INFLUENZA (FLU)*

- ♦ Influenza or flu is a viral infection of the respiratory tract.

# ASTHMA

## *ASTHMA*

- ◆ Asthma is a chronic disease in which the small airways get narrow.

# CANCER

## *CANCER*

- ◆ Cancer is a disease in which cells multiply in ways that are not normal.

# STREP THROAT

## *STREP THROAT*

- ◆ Strep throat is a bacterial infection of the throat.

# LICE

## *LICE*

- ◆ Lice are tiny insects that live in hair and suck blood from skin.

# HEART DISEASE

## *HEART DISEASE*

- ◆ Heart disease is a disease of the heart and blood vessels in which fatty materials build up in the blood vessels and blocks or narrows them.

# PINK EYE

## *PINK EYE*

- ◆ Pink eye is an inflammation of the membrane of the eye. Pink eye can be viral, bacterial, or allergic.

# DIABETES

## *DIABETES*

- ♦ Diabetes is a disease in which the body does not make or cannot use insulin.

# EAR INFECTION

## *EAR INFECTION*

- ♦ An ear infection is usually caused by an infection of the nose and throat and passes into the ear cavity.

# MUMPS

## *MUMPS*

- ♦ An infectious disease caused by a virus causing glands to swell, fever, diarrhea and a general feeling of being ill.

# AIDS

## *AIDS*

- ◆ AIDS is the breakdown in the body's ability to fight infection after the HIV virus enters the body.

# CHICKEN POX

## *CHICKEN POX*

- ◆ Chicken pox is an infectious disease caused by a virus. Chicken pox affects the skin and the lining of the mouth and throat with a rash.

# STROKE

## *STROKE*

- ◆ A stroke occurs when part of the brain is damaged because its blood supply is disturbed.

# **RABIES**

## *RABIES*

- ◆ Rabies is a viral disease of animals and humans that can be spread through a bite or scratch.

# **PNEUMONIA**

## *PNEUMONIA*

- ◆ Pneumonia is inflammation of the lungs usually caused by an infection.

# **TUBERCULOSIS**

## *TUBERCULOSIS*

- ◆ Tuberculosis is an infectious disease caused by bacteria that causes coughing, fever, fatigue, poor appetite and weight loss.

# MEASLES

## *MEASLES*

- ♦ Measles is a highly contagious disease caused by a virus that spreads throughout the body. Measles affects mostly the skin and respiratory tract.

# ULCERS

## *ULCERS*

- ♦ An ulcer is a raw spot that develops in the lining of the stomach or elsewhere, causing burning and pain.

# CYSTIC FIBROSIS

## *CYSTIC FIBROSIS*

- ♦ Cystic fibrosis is an inherited disease in which thick mucus clogs the lungs.

# **EPILEPSY**

## *EPILEPSY*

A chronic disease in which nerve messages in the brain are disturbed for brief periods of time.

# **APPENDICITIS**

## *APPENDICITIS*

- ♦ A condition where the appendix becomes swollen and inflamed and fills with pus. The cause is not fully understood.

# **ALZHEIMER'S**

## *ALZHEIMER'S*

- ♦ An incurable disorder of the brain in which there is a progressive loss of memory and other intellectual functions.

## **ANSWER KEY**

1. Common Cold: Communicable (YES)
2. Allergies: Non-Communicable (NO)
3. Flu: Communicable (YES)
4. Asthma: Non-Communicable (NO)
5. Cancer: Non-Communicable (NO)
6. Strep Throat: Communicable (YES)
7. Lice: Communicable (YES)
8. Heart Disease: Non-Communicable (NO)
9. Pink Eye: Communicable (YES)
10. Diabetes: Non-Communicable (NO)
11. Ear Infection: Non-Communicable (NO)
12. Mumps: Communicable (YES)
13. AIDS: Communicable (YES)
14. Chicken Pox: Communicable (YES)
15. Stroke: Non-Communicable (NO)
16. Rabies: Communicable (YES)
17. Pneumonia: Communicable (YES)
18. Tuberculosis: Communicable (YES)
19. Measles: Communicable (YES)
20. Ulcers: Non-Communicable (NO)
21. Cystic Fibrosis: Non-Communicable (NO)
22. Epilepsy: Non-Communicable (NO)
23. Appendicitis: Non-Communicable (NO)
24. Alzheimers: Non-Communicable (NO)

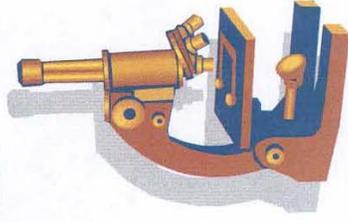
# NON-COMMUNICABLE DISEASE

A disease that can NOT be spread from one person (or animal) to another, such as allergies, diabetes, or heart disease.



# What are some disease causing agents?

- Bacteria – Living microscopic organisms that may cause disease.
- Virus – Microscopic organisms that cause disease. (Not living organisms.)
- Fungi – Organisms that get their nutrients from other living or dead things.
- Protozoa – Single celled microscopic organisms.



# How are diseases transmitted?

- **Through the air**



- **By touch**



- **On food**



- **In body fluids**

