



Preview Materials

Grade 5



Educators love our K-12 curriculum based on a user-friendly design and its supreme effectiveness in delivering comprehensive health knowledge and skills.

- Health Promotion Wave (HPW) is **research based** and has been **proven effective** upon the results of an independent evaluation. We provide the connections between the latest proven teaching methodologies and strategies and the most current health information available.
- Health Promotion Wave's **materials are reusable** year after year because no consumable student text is required; in addition, the program provides **updated inserts** on a regular basis at minimal cost.

- Health Promotion Wave's lessons can be **integrated within the current frameworks** of a variety of subjects like reading, writing, math, science, art and music (Grades K-5).
- Health Promotion Wave is **engaging**, with lessons designed to promote **direct participation of students, parents and teachers**.
- Health Promotion Wave incorporates a variety of quality custom made and collected multimedia outlets to **accommodate diverse teaching and learning styles**. Multimedia resources include literature, posters, games, videos, software and models all used to enhance the enrichment of the information and skills taught by our program.

Using this Preview:

Refer to the bookmarks on the left to navigate to the page you need. Included in the PDF files are:

Lesson Plans: The complete Teacher Edition contains lessons that cover a broad range of health topics including Personal and Mental Health; Family Life; Stress Management; Safety and Injury Prevention; Nutrition and Fitness; Drug Prevention; Growth and Development; Community Health and Disease Prevention.

Student Activities: Reproducible activity sheets that easily accommodate any class size. These hands-on activities are designed for use directly with the corresponding lessons in the Teacher Edition. No additional planning or drafting of lesson plans from a student text is required.

Parent Activities: These blackline masters are provided to keep parents informed and engaged in the health education of their children.

Transparencies: These full-color custom designed transparencies are one of many tools used to accommodate a variety of learning styles within the classroom.

Disease Prevention

Sessions 55-56 Communicable Diseases

GOALS

To identify the structures and functions of the immune system and identify common communicable diseases.

OBJECTIVES

1

The Immune System

Review the structures and functions of the immune system.

Skills: *critical thinking, personal responsibility*

2

Communicable Diseases

Distinguish between communicable and non-communicable diseases and identify common communicable diseases.

Skills: *critical thinking, communication, personal responsibility*

PARENT/ COMMUNITY CONNECTION

3

Parent Component

Demonstrate an understanding of disease prevention concepts.

Skills: *critical thinking, decision-making, personal responsibility*

MATERIALS

Transparency 17, Structures of the Immune System
Transparency 18, How the Immune System Works
Student Activity 38, The Immune System
Blackline Master: Structures of the Immune System
Blackline Master: Functions of the Immune System
Student Activity 39, Health Flash
Parent Activity 22, Maintaining a Healthy Immune System
poster board, art materials

CURRICULUM CONNECTION



science, writing, art

Introduction

An understanding of the immune system provides the foundation for identifying effective ways to prevent illness, including communicable and non-communicable diseases.

This double session is designed to give students a better understanding of the human body's defense against disease by reviewing the structures and functions of the immune system.

The Immune System

OBJECTIVE

Purpose: To review the structures and functions of the immune system.

Skills: *critical thinking, personal responsibility*



Structures of the Immune System

ACTIVITY 1

Materials: Transparency 17, Structures of the Immune System
Student Activity 38, The Immune System
Blackline Master: Structures of the Immune System



Time: about 10-15 minutes

1. This activity is designed to provide an overview of the immune system. Ask students to tell what they already know about the immune system. What is the major function of the immune system? What structures make up the immune system? What happens when the immune system fails?

2. Next, copy and distribute Student Activity 38, The Immune System. Display Transparency 17, Structures of the Immune System. Use the Blackline Master: Structures of the Immune System (in back of Student Activity Answer Key and Student Master Set) to review the parts of the immune system. Tell students to fill in the activity sheet as the information is presented in class (see Student Activity Answer Key). You may also want to copy and distribute the Blackline Master: Structures of the Immune System, and have students complete the activity sheet for homework.

Functions of the Immune System

ACTIVITY 2

Materials: Transparency 18, How the Immune System Works
Blackline Master: Functions of the Immune System



Time: about 10-15 minutes

1. This activity teaches students how the immune system works to prevent disease. Use Transparency 18, How the Immune System Works and the Blackline Master: Functions of the Immune System (see back of Student Activity Answer Key) to explain the functions of the immune system. Students should continue to fill in their activity sheet.

Disease Prevention

OBJECTIVE Communicable Diseases

2

Purpose: To distinguish between communicable and non-communicable diseases and identify common communicable diseases.

Skills: *critical thinking, communication, personal responsibility*

ACTIVITY 1 Research Project



Materials: Student Activity 39, Health Flash

Time: about 25-30 minutes

1. This activity will teach students to distinguish between communicable and non-communicable diseases. They will research common communicable diseases. Review the definitions of **communicable** (*contagious; a disease that is transmissible to other persons*) and **non-communicable diseases** (*not contagious; a disease that is not transmissible to other persons*). Discuss the following:

- *What communicable diseases can you name?* [cold, flu, chicken pox, mumps, measles, strep throat, head lice, lyme disease, AIDS]
- *What causes communicable diseases?* [Certain germs. Emphasize that not all microorganisms cause disease, but all communicable diseases are caused by microorganisms.]
- *What kind of environment do germs need to thrive in?* [Warm, dark, and moist areas]
- *Why is the human body an ideal place for germs?* [It has many warm, dark, and moist spots]
- *Are all communicable diseases easy to get?* [Emphasize that some communicable diseases, such as the cold or flu, are caused by airborne germs that are easily spread. Other communicable diseases are more difficult to get.]

2. Next, copy and distribute Student Activity 39, Health Flash. Tell students they will research a communicable disease, then complete the activity sheet. (You can either assign each student a communicable disease, or allow students to choose their own.) Students should do their initial work on scrap paper, then neatly fill in the activity sheet after completing their research to make a class book. Assign a due date for this activity. On the due date students will present their research to the rest of the class.

ACTIVITY 2 Oral Presentations



Materials: Student Activity 39, Health Flash

Time: about 45 minutes

1. In this activity, students will practice their oral communication skills and share their research with the rest of the class. On the due date, have each

Disease Prevention

student present his/her research. Give each student about five minutes for his/her presentation.

2. After students have completed their presentations, collect the activity sheet for evaluation, then save them for the next activity.

Class Book

ACTIVITY 3

Materials: Student Activity 39, Health Flash construction paper, art materials



Time: about 15-20 minutes

1. In this activity, students will create a class book of their research on communicable diseases. Have students design a cover.

2. Have students assemble the activity sheets in alphabetical order by name of disease, then place them inside the cover. If possible, laminate the cover.

Parent Component

OBJECTIVE

Purpose: To demonstrate an understanding of preventing the spread of germs and maintaining a healthy immune system.

3

Skills: *critical thinking, decision-making, personal responsibility*

Poster Contest

ACTIVITY 1

Materials: Parent Activity 22, Maintaining a Healthy Immune System



Time: about 10-15 minutes

1. In this activity, parents and students will work together to illustrate healthy behaviors which maintain a healthy immune system. Copy and distribute Parent Activity 22, Maintaining a Healthy Immune System. A list of health-promoting behaviors has been included in the letter.

2. For this activity, parents are asked to assist students in creating a poster with a fun and clear prevention message.

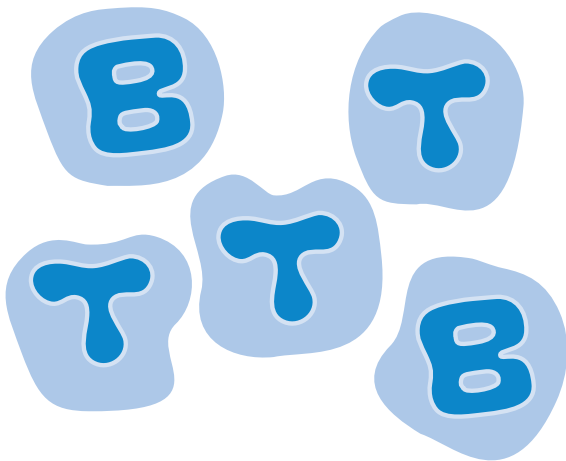
3. On the due date, have students share their projects. You may wish to pick winners for different categories. Collect and evaluate the projects. You can also invite a health professional from the local public health department to be a judge and review these health-promoting behaviors.

Structures of the Immune System

First Line of Defense:

Skin, and
Hairlike Structures
of the throat and GI tract

Main Line of Defense:



Lymphocytes
(white blood cells)

Lymphocytes are produced in the bone marrow, lymph nodes, and spleen

Two types of Lymphocytes



T-cells

destroy germs



B-cells

produce antibodies

DIRECTIONS: Please read and complete each question.

1. What are some of the body's natural defenses which protect the body from harmful substances?

2. The body's major line of defense against harmful substances is

3. List three body organs which play a major role in the immune system.

4. The white blood cells which play a major role in the immune system are called _____ .

5. Describe the role of T cells in the immune system.

6. Describe the role of B cells in the immune system.

7. Helper T cells are also called _____ because

8. Why is it important for the body to be able to produce enough T cells?

9. B cells produce _____ to prevent future infections from the same harmful substance.

THE IMMUNE SYSTEM

INTRODUCTION

The body has several natural defenses which protect against harmful substances. These defenses include the skin, and the lining of the respiratory system and the digestive system. Sometimes harmful substances get by these defenses. They have the potential to cause illness.

When this happens, the body's major defense, the immune system, must take over and destroy these harmful substances. In addition to destroying the substances, the immune system also has the ability to develop antibodies which will help to prevent this same substance from causing illness at a later time. The following structures of the immune system work together to prevent illness.

MAJOR STRUCTURES

The major structures of the immune system are white blood cells (WBC) and the organs which produce these white blood cells. These organs include:

- bone marrow
- lymph nodes
- spleen

There are different types of white blood cells. The WBC that play a major role in the immune system are known as **Lymphocytes**. Lymphocytes are produced in the bone marrow, lymph nodes, and the spleen. The immune system can remain healthy if the spleen is removed, as there are other organs to produce lymphocytes.

Lymphocytes are divided into two groups: T cells and B cells.

Tcells: The role of T cells is to destroy the harmful substance or microorganism. There are different T cells, each of which plays a role in the destruction of these harmful substances.

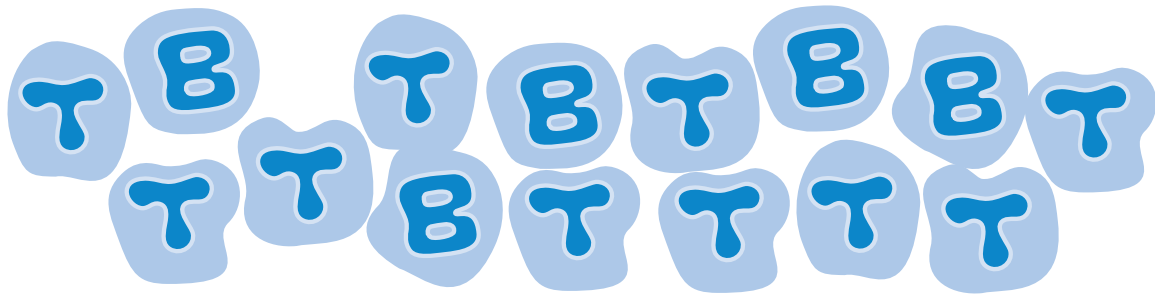
Bcells: These cells produce antibodies. Antibodies are chemicals that stop germs from multiplying, or slow them down so they can be destroyed by T cells. The next time the same germ enters the body, the specific antibody is produced immediately, protecting the body from illness.

How the Immune System Works

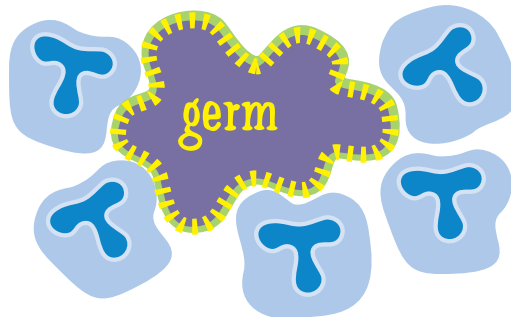
1. Identify the Invader



2. Increase the number of T cells and B cells



3. Attack the Invader



4. Return to normal



FUNCTIONS OF THE IMMUNE SYSTEM

When a harmful substance, such as a disease-producing microorganism, enters the body, the immune system responds immediately, effectively, and predictably.

I. identify the invader

When a harmful substance enters the body, certain T cells, known as “helper” T cells are responsible for identifying the substance. These helper T cells are often referred to as ‘watch dogs’ because they circulate throughout the blood watching for harmful substances.

II. increase the number of T cells and B cells

Once the helper T cells sound the alarm, certain T cells and certain B cells multiply quickly and in very large numbers. Think of it as building an army – the more T cells and B cells there are, the better the chance they have of destroying the harmful substance.

III. attack the invader

Once the T cells have multiplied, they begin attacking the harmful substance or microorganism. There are different types of T cells to do this job, which destroys the invader. Some T cells literally surround and engulf the invader.

In the meantime, B cells are producing antibodies to prevent future infections and illness.

IV. return to normal state

Once the harmful substance has been eliminated, the T cells and B cells decrease to normal numbers.

Health Flash Notice

A breakout of _____ has health officials concerned.

_____ is a communicable disease caused by _____.

It is spread the following ways:

- _____
- _____
- _____
- _____

Common symptoms include:

- _____
- _____
- _____
- _____

If you have any of these symptoms, please notify:

The best ways to prevent this infection are:

- _____
- _____
- _____
- _____



Parent Activity 22, Maintaining a Healthy Immune System

Dear Parent:

This week in health we have been discussing the role of the immune system in preventing disease. We reviewed the basic structures of the immune system and how it works to help prevent disease and illness.

You are most likely already aware of the research project your student did on a communicable disease. We made a class book of all of the research projects which I hope to be sending home for each parent to review.

To conclude this topic we have been discussing healthy behaviors which help to prevent the spread of germs and keep the immune system healthy. Some of these behaviors include:

- Getting adequate sleep
- Exercising regularly
- Eating healthy foods
- Practicing good personal hygiene
- Dealing effectively with stress

For this assignment, your child will be participating in a poster contest. Students must make a poster with a fun and clear prevention message. Use one of the above examples, or others related to disease prevention. The poster will be judged on its originality, appeal, and accuracy.

The due date for this assignment is _____.

Thank you for your assistance in this project. Please feel free to write comments and return this letter.

PARENT COMMENTS
