

Unit 1: Lesson 3 – The Adaptive Immune System

Vocabulary: The Components of the Adaptive Immune System

Using resources suggested by the teacher, find definitions for each of the following:

Antibody	
Antigen	
Antigen presenting cell	
B cells	
Dendritic cells	
Proliferation	
Protein	
Receptor	
T cells	

Refer to the online glossary and compare your definitions with those in the glossary. Make any necessary corrections to your definitions above.

Activity 1

Function of the Adaptive Immune System

Using resources suggested by your teacher, research the function of each of the adaptive immune system's components. Then work with your group to create a simple graphical model that explains the adaptive immune system. Sketch your model in the space below.

Activity 2

The Components of the Adaptive Immune System

- A. Complete the table below with the adaptive immune system component that carries out specific functions.

Function	Component(s)
Fight infection	
Communicate information about infection	
Establish immunological memory	
Create antibodies to fight infection	

- B. Complete the table below with descriptions of how adaptive immune system components function to fight infection.

Component	Function to fight infection
Antibodies	
T cells	
B cells	
Antigen presenting cells	
Cytokines	

- C. Drag and drop terms into fields in the concept map of the adaptive immune system, correctly completing the diagram. Describe any differences between the interactive concept map and your graphical model from Activity 1.

Activity 3

Illustrating the Adaptive Immune System

Work in your group to create a multimedia resource (written story, skit, webpage, video script, etc.) to explain the features and functioning of the adaptive immune system. Use a suitable metaphor to illustrate the role of each immune system component and the communication between them. Describe or sketch your resource below.

Identify aspects of your metaphor that symbolize or relate to the following immune system components:

Antigen:

Antibody:

B cell:

T cell:

Antigen Presenting Cell:

Cytokine:

Evaluation Questions

Multiple Choice

1. Where are B cells formed?
 - A. Thymus
 - B. Bone marrow
 - C. Spleen
 - D. Lymphatic system
2. Where do T cells mature?
 - A. Thymus
 - B. Spleen
 - C. Bone marrow
 - D. Lymphatic system
3. An antibody is a _____.
 - A. Cell
 - B. Lipid
 - C. Carbohydrate
 - D. Protein
4. What is proliferation?
 - A. Rapid multiplication of immune system cells
 - B. Production of specific antibodies
 - C. Neutralization of antigens
 - D. Marking of target antigens with marker molecules

Short Answer

1. Describe the different roles of the three types of APC's.
2. Which cells of the *adaptive* immune system release cytokines?
3. Describe the function of cytokines in the immune system.
4. What parts of the adaptive immune system are involved in immunological memory?
5. Why is immunological memory beneficial?