



Principles of Biomedical Science

Virtual Learning

9-12 / PLTW[®] PBS

May 21, 2020



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Lesson: May 21, 2020

Objective/Learning Target:

Students will be able to: research and identify the function of the Nonspecific defenses of the immune system and how it functions to protect the body.

(Reference: PLTW[®] 5.1.6 Lines of Defense)



Let's Get Started (Bell Ringer):

Watch the following Videos on Innate (Non-specific) defenses of the immune system:

[Nonspecific Defense](#)

[Immune System, Part 1: Crash Course A&P #45](#)



Lesson/Activity:

Let's Start by... Getting out your Notebook, Lab Journal, or a separate piece of paper. You will be using appropriate research techniques to investigate the basic structure and function of the innate or nonspecific immune system. Take notes in your laboratory journal about these types of defences and properly document all sources.



Answers:

Physical Barriers

- such as skin, the gastrointestinal tract, the respiratory tract, the nasopharynx, cilia, eyelashes and other body hair.

Defense Mechanisms

- such as secretions, mucous, bile, gastric acid, saliva, tears, and sweat.

General Immune Responses

- such as inflammation, complement, and non-specific cellular responses.

Cells of the Innate Immune System

- *Phagocytes, or Phagocytic cells, Macrophages, Mast cells, Neutrophils, Eosinophils, Basophils, Natural Killer cells, & Dendritic cells*

The Complement System

- *Opsonization, Chemotaxis, Cell Lysis, & Agglutination*

Specific Information about these can be looked up.



Lesson/Activity continued:

Get notecards or make some from blank lined or white paper. Create a flash card with each major function from the previous activity. Explanation on front of card, picture of the function on the back of the card.

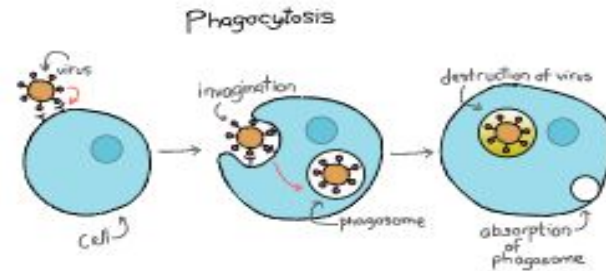
Answers:

Notecard example:

Explanation on front of card

Phagocytes, or Phagocytic cells: Phagocyte means “eating cell”, which describes what role phagocytes play in the immune response. Phagocytes circulate throughout the body, looking for potential threats, like bacteria and viruses, to engulf and destroy. You can think of phagocytes as security guards on patrol.

Picture on the back of the card





Practice:

Get out your notebook, lab journal, or a separate piece of paper.

1. Go online and find (3) amazing resources that helped you understand how Innate/Nonspecific immune the best. Share the resources with someone in class, to help them.
2. Do YouTube/Video search to find the 3 videos that helped you the most to understand Innate/Nonspecific immune response, share these new clip with your teacher.



Answers:

Articles and videos will vary depending on student needs



Additional Practice:

Additional Resources to Explore:

Watch following video clips about Innate/Nonspecific immune system. Jot down information that was helpful to you in your notebook, lab journal, or separate piece of paper.

[Immune System Rap 1: Non-Specific \(Innate\) Responses](#)

Check what you have learned

[Quiz: Nonspecific Defenses](#)

[Quizizz Innate Immune System](#)



Answers:

Answers are shown on quiz