

WebQuest

Webquest- The Immune System

This activity a condensed version from the site:

http://pulse.pharmacy.arizona.edu/10th_grade/disease_epidemics/science/launch_defense.html

End Result: Students create/present PowerPoint presentations to teach their topics to the class about their section (jigsaw-style) is adequate. – PRESENTATIONS On WEDS/THURSDAY

Steps:

1. Divide the class into **four**
2. Assign each member of the group one of the four research topics:
 - **Topic #1.** Investigate the body's initial defense system against invading microorganisms.
 - **Topic #2.** Investigate the cells of the immune system.
 - **Topic #3.** Investigate the role of an antibiotic in fighting an infection.
 - **Topic #4.** Investigate some of the disorders of the immune system.
3. After they have collected information about their topic, have them get back together with their group and explain their topics to each other. By the end of the activity, all members of the group will understand each of the four topics.

Rubric

	A	B	C	D/F
Content - Accuracy	All content throughout the presentation is accurate. There are no factual errors. _____/10	Most of the content is accurate but there is one piece of information that might be inaccurate.	The content is generally accurate, but one piece of information is clearly flawed or inaccurate.	Content is typically confusing or contains more than one factual error.
Visual Appeal	All graphics are attractive (size and colors) and support the theme/content of the presentation. _____/5	A few graphics are not attractive but all support the theme/content of the presentation.	All graphics are attractive but a few do not seem to support the theme/content of the presentation.	Several graphics are unattractive AND detract from the content of the presentation.
Cooperation	Group delegates tasks and shares responsibility effectively all of the time. _____/5 Group Members Split Work - -	Group delegates tasks and shares responsibility effectively most of the time.	Group delegates tasks and shares responsibility effectively some of the time.	Group often is not effective in delegating tasks and/or sharing responsibility.
Effectiveness in Teaching Class	Project includes all material needed to gain a comfortable understanding of the topic. It is a highly effective study guide. - COUNLD YOUR CLASSMATES FOLLOW ALONG and TAKE NOTES _____/15	Project includes most material needed to gain a comfortable understanding of the material but is lacking one or two key elements. It is an adequate study guide.	Project is missing more than two key elements. It would make an incomplete study guide.	Project is lacking several key elements and has inaccuracies that make it a poor study guide.

Topic #1. Investigate the body's initial defense system against invading microorganisms. Once this defense is breached, investigate how the organs of the immune system respond to the invader. Gather information on each organ and what role they play in your immune system. Be prepared to provide this information to your group. As a guide for your research, you should be able to answer the following questions:

A. What is the first line of defense in protecting your body from an attack by a microorganism? How does your body defend itself when it is invaded by such an organism?

B. What is any foreign substance that triggers an immune response in the human body known as?

C. Identify the eight organs of the immune system. What are they generally referred to as and why?

D. What organ is responsible for producing the immune cells in your body? How are these cells carried throughout your body?

E. What is the function of each organ in an immune response? Where is it located in your body? How are these organs connected?

Resources:

- <http://www.cancer.gov/cancertopics/understandingcancer/immunesystem>
- <http://www.howstuffworks.com/life/human-biology/immune-system.htm>
- http://www.kidshealth.org/parent/general/body_basics/immune.html
- http://www.niaid.nih.gov/Publications/immune/the_immune_system.pdf

WebQuest

Topic #2. Investigate the cells of the immune system. Gather information on how they function in an immune response to a "foreign invader". What role do these cells play in protecting your body now and from any future attacks by the same organisms? Answer the following questions and share them with your group:

A. What are the main immune cells in the body called and what are the two major types?

B. What cells are responsible for producing antibodies? What role does an antibody play in an immune response? What system "cleans up" after the antibodies do their work?

C. What are the two major contributions of the T cells to the immune defense? Explain why T cells are so important in an immune response.

D. How are the two major types of immune cells able to recognize and fight off invading microorganisms?

E. How do we gain immunity from future infections?

Resources:

- <http://www.cancer.gov/cancertopics/understandingcancer/immunesystem>
- <http://www.howstuffworks.com/life/human-biology/immune-system.htm>
- http://www.kidshealth.org/parent/general/body_basics/immune.html
- http://www.niaid.nih.gov/Publications/immune/the_immune_system.pdf

WebQuest

Topic #3. Investigate the role of an antibiotic in fighting an infection. Provide the information for your group about the following questions:

A. Why are antibiotics used and for what type of infections are they most effective in treating?

B. In what two ways are antibiotics created? How do they destroy "foreign invaders" in our bodies?

C. Why is it important to follow the instructions for taking a prescribed antibiotic very carefully? Except for in times of an allergic reaction, why should you always finish a course of antibiotic once you have started it?

D. What are some problems that arise when a bacteria becomes resistant to an antibiotic?

Resources:

- <http://www.cancer.gov/cancertopics/understandingcancer/immunesystem>
- <http://www.howstuffworks.com/life/human-biology/immune-system.htm>
- http://www.kidshealth.org/parent/general/body_basics/immune.html
- http://www.niaid.nih.gov/Publications/immune/the_immune_system.pdf

WebQuest

Topic #4. Investigate some of the disorders of the immune system. Name three major immune system disorders and describe them and how they affect your body's ability to fight off infection. Answer the following questions and share them with your group:

A. How does each of the three disorders you have chosen affect the immune system? Where do they originate?

B. What are some ways to treat these disorders? What are some diseases that may develop due to an immune system disorder?

C. Describe in detail immunotherapy and some of the pros and cons in using this approach to combat immune disorders. Give your opinion on the concept of immunotherapy (is it good or bad?).

Resources:

- <http://www.cancer.gov/cancertopics/understandingcancer/immunesystem>
- <http://www.howstuffworks.com/life/human-biology/immune-system.htm>
- http://www.kidshealth.org/parent/general/body_basics/immune.html
- http://www.niaid.nih.gov/Publications/immune/the_immune_system.pdf