



Principles of Biomedical Science

Virtual Learning

9-12 / PLTW[®] PBS

April 22, 2020



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Lesson: April 22 2020

Objective/Learning Target:

Students will be able to: Students will design a brochure or poster to explain the differences between LDL and HDL cholesterol in the body. (*Reference: PLTW[®] 4.3.1 What is Cholesterol?*)



Let's Get Started (Bell Ringer):

Watch Videos on Cholesterol:

[All Health TV: Recommended Cholesterol Levels](#)

[Cleveland Clinic Cholesterol Numbers: When Is It Time To Treat?](#)



Lesson/Activity:

Start by...

1. Go online and find (3) amazing resources that made the most sense to you.
2. Do YouTube/Video search to find the 3 videos that helped you the most understand Cholesterol, HDL, & LDL.



Answers:

Answers will vary depending on what you found and looked up as a resource.



Lesson/Activity continued:

Use the internet to research the many functions cholesterol has in our cells and body. (You should look at using some that you found from the previous activity). For each bullet below, list and describe these functions in your laboratory journal or on a blank piece of paper. Cite your references:

- The cell membrane
- Learning and memory
- Digestion and bile acids
- Vitamin D
- Steroid hormones



Answers:

Answers will vary based on resources and references but they will all basically be the same.



Practice:

#1 Design and produce a brochure or poster that informs and provides accurate, easy-to-follow information to someone worried about their cholesterol.

Use appropriate internet search strategies to access reliable sources and research information that provide answers to the questions on next page. (feel free to use those that you have collected in the beginning of this lesson)



Practice:

- What are LDL and HDL?
- How do LDL and HDL differ structurally and functionally?
- Why do doctors monitor the concentrations of LDL and HDL in patients' blood?
- How are the concentrations of LDL and HDL associated with the risk for heart disease and associated disorders?
- What other molecules in a patient's blood are monitored along with LDL and HDL?
- What do the results of a cholesterol test mean? How do patients interpret each value?
- What can patients do to change the levels of LDL and HDL in their blood?
- How does intake of unsaturated, saturated, and trans fats affect cholesterol levels and overall health?



Answers:

Will vary based on research and design of product.



Additional Practice:

Watch [9 Signs & Symptoms of High Cholesterol YOU MUST NOT IGNORE](#) and write down what these 9 symptoms are in your notebook or on blank notebook paper.



Answers:

All answers can be found at this [link](#).