



Principles of Biomedical Science

Virtual Learning

9-12 / PLTW[®] PBS

May 8, 2020



Principles of Biomedical Science

9-12/PLTW[®] PBS
Lesson: May 8, 2020

Objective/Learning Target:

Students will be able to: Identify ways to help prevent the transmission of "infectious agents" pathogens. (*Reference: PLTW[®] 5.1.2 Infectious Disease Agents*)



Let's Get Started (Bell Ringer):

Watch the following Videos:

[Infectious Diseases - How do we control them?](#)

[Proper handwashing! What gets left on your hands when you don't wash properly](#)



Lesson/Activity:

Start by reading the article [How to prevent infections from Harvard Health Publishing Harvard Medical School](#). As you read jot down in your notebook or separate piece of paper what Harvard Medical School believes is the top 7 precautions you can do to help avoid getting sick from a infectious disease.



Answers:

Top 7 things to do: visit the web site for more details on these major concepts.

1. **Good hygiene: the primary way to prevent infections**
2. **Practice good food-safety techniques to avoid getting sick**
3. **Vaccinations are essential if you are to avoid getting sick**
4. **Take travel precautions**
5. **How to prevent infections by sexual transmission**
6. **Avoiding bug-borne pathogens**
7. **Using animal-control to prevent infections**



Lesson/Activity continued:

One major way to stay healthy beside the seven major ideas from Harvard Medical is to focus on Nutrition and a Healthy Diet. So some of your own research to find out what kinds of foods are good to consume when trying to stay healthy or recover from illness.



Answers:

A healthy diet focused on recovering from illness:

- Fruits, vegetables, whole grains, and low-fat or fat-free milk and milk products.
- Includes lean meats, poultry, fish, beans, eggs, and nuts.
- Is low in saturated fats, trans fats, cholesterol, salt (sodium), and added sugars.

Fruits and vegetables are high in vitamins and minerals. Protein is necessary for wound healing. Foods high in fiber such as fruits, vegetables, and whole grains may make it easier to have a bowel movement. Certain vitamins may help prevent damage to the body's cells. They also may help repair damage to your body tissue caused by a chronic disease. Omega-3 fatty acids are found in fish and may help decrease constipation and inflammation.

Depending on a person's medical condition, a special diet and supplements may be ordered. The recommended diet may change over time as health conditions change. Your healthcare provider will instruct you on your special diet and supplement needs.



Practice:

Start by watching the following video on [How soap kills the coronavirus](#) Once you are done with the video describe in your notebook or piece of paper how and why soap is such an important factor in preventing the transmission of infectious pathogens in your own words. Describe it so that an elementary student will be able to understand why it is so important.



Answers:

All answers will vary, but the idea that the membrane of the virus is made of a fat layer and that soap helps break down that fat layer so that the virus breaks up and the genetic material then can not find a way to get transferred to you will be the main idea.



Additional Practice:

They say that washing your hands for 20 seconds is very important, and with that statement came a long line of ideas for 20 second songs to sing while washing your hands. Watch the following video clip to inspire you, [20-Second Parodies for Handwashing](#) once you are done it is your job to come up with your own song to help. You may write your own song from scratch or come up with some new catchy lyrics on your own. Write your new song down in your notebook, or separate piece of paper. Or take it one step further and make your own video.



Answers:

All songs will vary, good luck I am looking forward to hearing some of your masterpieces.