

Career Cluster World



Information Technology

8th Grade Science Lesson

8th grade Science

Information Technology

Science Standard:

- 8L.1 Understand the hazards caused by agents of diseases that affect living organisms.
 - 8.L.1.1 Summarize the basic characteristics of viruses, bacteria, fungi and parasites relating to the spread, treatment and prevention of disease.
 - 8.L.1.2 Explain the difference between epidemic and pandemic as it relates to the spread, treatment and prevention of disease.

Career Objectives:

- Students will learn about careers in the Information Technology career cluster.
- In this lesson students will see the connection between the science content and careers by learning about the spread of viruses and diseases and the difference between an epidemic and a pandemic. They will also learn about the impact of the pandemic on the Hospitality and Tourism industry.

Materials: device with internet access, CK12.org or another online textbook, websites listed below in online resource section

Teacher Preparation: This lesson demonstrates how information technology can be used to aid students in understanding how epidemic and pandemic spread and determine the effectiveness of treatment.

Step 1: Getting started with Essential Questions: Determine students' prior knowledge by having them to review and answer the following essential questions:

1. What causes a pandemic?
2. Can a pandemic be cured?
3. What is the difference between a pandemic and an epidemic?
4. Which is more likely lead to an epidemic - bacteria, parasites, fungus, or viruses? Explain why?
5. What is a statistic?
6. How are statistics used to prevent spread of diseases?

Step 2 Main content: Students will further develop their knowledge and find the answer to the above questions by exploring CK12.org or other online text to learn about Epidemics and Pandemics. In CK12.org, you can show video on Pandemic and Epidemic and the difference between the two.

Step 3 Career Exploration Activity: Students will also learn about careers in the Information Technology career cluster from exploring My next move website and Career View website. They can also see what knowledge, skills, abilities, personality, and technology is needed in the career cluster. From the Virginia Career View site, students can see specific position within this career cluster and the education required, the average salary and the projections or likelihood of the demand of the positions.

Specific positions within the Information Technology Career Cluster include:

- Medical Records Analyst
- Health Information Technologists
- Health Informatics Specialist
- Nursing Informatics Officer
- Clinical Data Managers
- Document Management Specialist

Step 4: Students can visit the CDC website. From this website, they will be able to learn how information technology is applied in the form of data and statistics that are used to track the number of outbreaks of a particular illness. Data and statistics are also used to record and monitor the number of quarantines and isolations. Students can further see how data and statistics are used to track contact tracing and make regulations regarding travel during epidemics and pandemics. This will give them insight on how decisions were made to close travel, schools and other places with large gatherings during the pandemic.

Step 5 Assess Learning: Have students implement their learning by using the data tracker on the CDC website to answer the Assess Learning questions. You can also have students submit their answers to the essential questions as an exit ticket.

Step 6 Challenge/Extension activity: Have students do a 1-2 paragraph summary explaining the specific impact of the pandemic on the Hospitality and Tourism industry (economic loss of positions, closing of businesses, change in procedures such as carryout only, delivery only etc.). Students can also explain what could have been done

differently to lessen the impact of the pandemic to the Hospitality and Tourism industry. What could have been done differently to reduce the spread of the virus and limit the length of the pandemic? You can have students to brainstorm first in small groups or pairs before they write their summaries.

Online resources:

- <https://www.mynextmove.org/find/browse?c=72>
- Online Textbook: <https://www.ck12.org>
- <https://www.vaview.net/careers/results>
- <https://www.cdc.gov/>
- Pandemic Video: <https://youtu.be/UG8YbNbdaco>

Assess Learning

From the CDC website you will have to determine which section the answer can be found on. Read each question carefully and then determine where you would look for the answer.

1. Which country has reported the most cases of Covid 19 in the past 7 days? How many did they report?
2. What is the daily update for the number of hospitalizations for Covid 19 in the US?
3. What parts of the world are showing a decreasing trend or lowering cases of the Covid 19?
4. Australia has less than 10 cases reported in the last 7 days, why do you think they have such few cases?
5. The US and Russia have the largest amount of reported cases in the past 7 days and show the highest numbers in an increasing trend. Why do you think these two countries has such high numbers and are still increasing while other countries are decreasing?