Doctor, Doctor, Tell Me the News

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Overview: A problem solving game that covers diseases of the human body.

Concepts: Disease, virus, bacteria, organ systems, problem solving.

SC Standards 7.1 - The student will demonstrate an understanding of technological design and scientific inquiry, including process skills, mathematical thinking, controlled investigative design and analysis, and problem solving.

SC Standards 7-3 - The student will demonstrate an understanding of the functions and interconnections of the major human body systems, including the breakdown in structure or function that disease causes.

7-3.4 - Explain the effects of disease on the major organs and body systems (including infectious diseases such as colds and flu, AIDS, and athlete’s foot, and noninfectious diseases such as diabetes, Parkinson’s, and skin cancer).

NGSS Science and Engineering Practices

- Constructing explanations and designing solutions
- Engaging in argument from evidence
- Obtaining, evaluating and communicating information
- Planning and carrying out investigations
- Analyzing and interpreting data

Materials required: QR-code readers (Ipads) for each group
    Disease List for each group
    Different colored folders
    Patient Write-ups in QR codes
    Diagnosis Sheet for each group
Lesson Format

**Phase I. Engage**

Grab the students’ attention by asking the class the following questions:

- Have you ever wondered what goes on inside a doctor’s office?
- How does a doctor determine what illness a person has?
- Have you ever considered being a doctor or nurse?

As background, make sure that students have completed the chapter covering diseases and are familiar with the human body and organ systems.

**Phase II. Explore**

**Introductory Information:** (Read the following information aloud to the students.)

In a busy doctor’s office, the head doctor has hired you to take patients to help him/her diagnose that patient’s disease. Using the patient write-up given to the nurse and your knowledge of diseases, you must diagnose them quickly.

**Activity:**

1. Students will have to diagnose nine diseases in 30 minutes. Three minutes for each disease and three minutes for review.

2. Nine different patients will be in different colored folders around the room. To protect the patients’ privacy, their information will be presented in the form of QR codes. Students will take turns in their group collecting the patients’ information using the QR code reader app on an IPAD. Each student will discuss their patient’s information with the group and as a team; the group will come up with a diagnosis. Each group must see all 9 patients. There are 9 disease write-ups that the group will refer to for diagnosis. However, you should be careful since so many diseases sound similar.

3. Once your group has diagnosed all of the patients and wrote their diagnosis on the Diagnosis Sheet, they must turn it in to the physician attendee (the teacher) for review. The first group to get all 9 diseases correct will win a prize.

**Phase III. Explain**

**Answers:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gloria Hampton</td>
<td>Athlete’s foot</td>
</tr>
<tr>
<td>George Talons</td>
<td>Flu</td>
</tr>
<tr>
<td>Ester Graves</td>
<td>Diabetes</td>
</tr>
<tr>
<td>Julia Plimer</td>
<td>Cold</td>
</tr>
</tbody>
</table>
Phase IV. Elaborate

**DISEASE** is a condition that does not allow the body to function normally. Diseases can affect either an individual organ or an entire body system. Diseases are divided into two groups— infectious and noninfectious.

*Infectious diseases* are caused by tiny organisms called *pathogens*.
- These pathogens can be bacteria, viruses, fungi, or protists.
- These pathogens can come from another person, a contaminated object, an animal bite, or the environment.
- The *immune system* is responsible for distinguishing between the different kinds of pathogens and reacting to each according to its type.
- Once a pathogen has entered the body, it works by damaging individual cells within the organs or in some cases attacks an entire body system.

*Noninfectious diseases* are diseases that are not caused by pathogens in the body.
- They are not spread from organism to organism.
- These diseases are caused by malfunctions in body systems that are either inherited or caused by environmental factors.

**Thought questions to ask the students:**

1) As the physician’s assistant, what do you think you or the nurse, or even the physician, could have done differently?

2) Do you think if there were 10 diseases and 7 patients you would have had a higher percentage of correct diagnoses? Why?

3) What does this make you think about doctors making correct diagnoses when there are thousands of diseases in the real world?

4) Is anyone interested in being a doctor or studying disease?