



***Learn how the immune system and vaccines fights bacteria and viruses
– VEGA Teaching Scenario***

The scenario in a nutshell:

Topic: The human body's defence against bacteria and viruses

Subject(s): Health sciences, biology

Age / Grade: 13 + / 7-9

Short description of the game:

Antidote Covid-19 is a strategy game where the player helps the human immune system fight off bacteria and viruses, including the dreaded SARS-CoV-2, that still ravages as a pandemic in our world. This fun game teaches the players more about the immune system, pathogens and how to stay safe from Covid-19. The game creators have cooperated with WHO, Unicef Finland, GAVI (The vaccine alliance) and other health services which secures that the game lies on a scientific foundation. In the game, the player is recruited to Antidote Laboratories just before the pandemic. The player joins a medical science team in the search for more and better vaccines, all based on true events.

ANTIDOTE COVID-19



Introduction to the scenario (*incl. possible applications, alternatives, risks, and possible challenges*):

- The students use the same iPads to be able to continue the game where they left off.
- To get vaccinated or not? Prepare for an objective debate in the class.

Learning outcomes for this scenario:

- students gain knowledge about different bacterias and viruses
- students learn how bacteria and viruses spread in the cell
- students understand the difference between the Coronavirus and the disease COVID-19.
- students understand how vaccines are developed
- students know how they can protect themselves and others from viruses, and especially the Coronavirus.
- students practise cooperation in pairs
 - **Cooperative pairs:**
 - Teachers will have already set norms for working in pairs:
 - Take turns
 - both share
 - Look at the speaker
 - Actively listen
 - Nodding
 - Asking questions for clarification
 - Respect others' thinking
 - Think before speaking
- develop self-evaluation skills

Selection of learning outcomes from the Finnish Curriculum:

- M5 guides the student to deepen their understanding of physical, mental and social health and factors and mechanisms that strengthen and threaten these and support the student's ability to use related concepts correctly.
- M6 supports the student to develop their skills to seek and use information about health and illness and promote the student's ability to act appropriately in situations related to health, safety and illness.
- M8 guides the student to observe and critically examine phenomena related to health and illness as well as values and norms associated with them and to assess the reliability and relevance of information.
- (Biology) M5 guide the student to understand human development and the basic functions of the body

Formative assessment

Number of students: Duration (estimated time/number of lessons): 20 students, 4 lessons á 45 min,

Prerequisites (necessary materials and online resources):

- A handheld device with the game Antidote COVID-19 (available on App Store and Google Play)

Before the program begins (preparatory work for teacher):

- download the free game to a handheld device
- get familiar with the game
- search and collect information and material about the immune system, the Coronavirus, COVID-19 and vaccines
- share the material with the students in eg. Google Classroom
- divide the students into cooperative pairs
- The game is in English. Make a word list, eg. [Swedish to English wordlist](#).

The scenario

Part one (two lessons x 45 min)

Lesson 1:

Get started through a discussion together with the students and make a mindmap on the board, to get a perception of the students' prior knowledge about bacteria, viruses, the Coronavirus, COVID-19 and vaccines.

Eventually you will come to the conclusion that most of the students know a lot about the topic, but no one really has a deeper understanding. Present the research questions:

1. How do bacterias and viruses infect the human organs?
2. How does the immune system work?
3. How are vaccines developed?
4. How does a vaccine work?

Tell them about the game (short description). Watch the game intro together and visualize the scenario they are in. Awaken the students' interest in the game by letting them try the game. Let them play the rest of the lesson.

Short break.

Lesson 2:

1. Debrief, how is it going? Discussion with the whole group.
 - What is the game about?
 - Is there anything you do not understand?

The students will say: the vocabulary is difficult, we don't know what the words mean.

Let the students sit together with their pair.

2. Introduce the students to the word list. Let the students read through the word list in pairs and get familiar with the vocabulary.
3. After reading the list, let the students continue playing for 15-20 minutes.

The teacher's role is to guide the students further in the game and evaluate their understanding of the phenomena and the game, by asking questions.

4. When there are 5-10 minutes left, share and discuss. Discuss in the whole group.
 - How far along did you get?
 - Did you have trouble with anything while playing? What? Where? Why?

Part two (two lessons x 45 min)

Lesson 1

Summarise the conclusions from the last lesson. Prepare the students for playing one last time, now with the knowledge they have earned.

While the students' play, the teacher continues to guide and ask questions.

Lesson 2

Evaluate what have the students learned, cooperation, opinions and suggestions.

Here is an example of an evaluation form that you can copy. <https://forms.gle/7WPupLHLqKcDVtdt9>