

# Exploring the One Health Initiative

## Description

*This lesson guides students to explore One Health and global connectivity. Students will look at worldwide health issues and create a solution to a global health problem.*

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## Lesson Plan Tags

**Check the standards that are met in your lesson plan, check all that apply.**

- Middle School    High School    6<sup>th</sup> Grade Science    7<sup>th</sup> Grade Science  
 8<sup>th</sup> Grade Science    Middle School Math    Middle School CTE  
 Biology    Chemistry    Physics    Energy Harvesting    Anatomy  
 Other High School Science    High School Math  
 HS Family and Consumer Science    HS BFIT    HS Marketing & Entrepreneurship  
 Agriculture    HS Technology    Trade & Industrial    Health Science



# Introduction

The One Health Initiative is a global collective of professionals and citizens who are seeking to promote health of animals, humans, and the environment. This lesson is a great example of global connections of ecosystems as well as individuals. It also provides students a tangible example of citizen science and how they can become a part of the broader network of scientists. Giving students time to explore things that interest them will ideally give them a vested interest in science and a chance to direct their own learning. The assessment will be the content they produce, not necessarily of one specific element of One Health but of the overall vision of the One Health initiative. The idea is to get students to explore and generate their own thoughts and place in a large ecosystem.

## Curriculum Alignment

Bio.2.1 Analyze the interdependence of living organisms within their environments.

Bio.2.1.1 Analyze the flow of energy and cycling of matter (water, carbon, nitrogen and oxygen) through ecosystems relating the significance of each to maintaining the health and sustainability of an ecosystem.

Bio.2.1.3 Explain various ways organisms interact with each other (including predation, competition, parasitism, mutualism) and with their environments resulting in stability within ecosystems.

Bio.2.2 Understand the impact of human activities on the environment (one generation affects the next).

Bio.2.2.1 Infer how human activities (including population growth, pollution, global warming, burning of fossil fuels, habitat destruction and introduction of nonnative species) may impact the environment.

Bio.2.2.2 Explain how the use, protection and conservation of natural resources by humans impact the environment from one generation to the next.

## Objectives

Students will be able to explain in their own words the goals of One Health.

Students will be able to create a solution to a global health problem.

Students will be able to design a wearable device to benefit a specific population.

## Time & Location

Time: Generally this can be accomplished in two 90 minute class periods, but extra time is encouraged to have students finish up their product.

Location: Classroom (if internet accessible devices are available), media center, and home.

## Teacher Materials

Devices with internet access. (per student or group as available)

Websites to create product. Weebly, Blogspot, and wordspace are all very useful for this lesson. (paper works as well)

Rubric (see Assessment section)

## Student Materials

Device with internet access. (Some students may not have access to internet outside of school)

Rubric (so they know what is expected)

Email. (for creating a blog)

## Safety

There are no special safety considerations for this lesson.

## Student Prior Knowledge

- What is an ecosystem?

- What does the word globalization mean?
- How to create a technical drawing
- General knowledge about electronic devices
- Knowledge of some of the health issues in the world.

## Teacher Preparations

- Acquire necessary devices enough for a class set.
- Acquire plugs and/or power strips for devices.
- Print rubric (enough for each group/student)
- Familiarize with the website of choice. How to create, edit, and publish are all things that students will need help with.

Prepare students to work in groups to research and create a product. If the device needs to be plugged in, make sure students have access to a wall outlet.

## Activities

At the start of the lesson the teacher will ask students to write down the most important health issue they believe is impacting the world today and why. Monitor student activity and help student who may not know where to start. (5 min)

The teacher will lead students to share what they have written. (5-10 min)

Questions for guiding the discussion.

- What do you think the biggest health issue is facing the world?
- What are some tangible, objective, reasons you chose this issue?
- Does this issue apply to people around the world or in a specific region?

The teacher will give a brief introduction of One Health. (Does not include major details or mission statement of One Health). A suggested intro could be “One Health is a group of scientists and non-scientists who are studying global health issues. Your job is to provide a detailed explanation of what One Health does as if you were presenting it to someone who knows little about Health Science. (2 min)

The teacher will provide an example of a websites to create a blog post. The teacher will show how to set up and edit a web post. Suggested websites are Blogspot, Wordpress, and Weebly. (10 min)

Direct the students to research the One Health Initiative and answer the questions below:

What are One Health's goals?

What are impacts of One Health on the world?

How can a person get involved with One Health?

Have students create blog posts discussing these questions. Students should also read and respond to two other groups' blog post. (If internet is not available this can be done using paper or perhaps a group discussion)

Next, students will design, on paper, a wearable device to benefit a chosen demographic. This design must have drawings that show all sides and how the device will be connected to its different parts. The teacher can distribute the rubric so that students know what should be included in their technical drawing. (Remainder of class/time allotted. Approximately 60-150 minutes).

Students will submit their products either electronically or on paper. Submissions can be done via a class website. Google classroom is a great resource for submissions and student replies.

## **Assessment**

Rubric for blog and drawing. See end of lesson plan.

## **Critical Vocabulary**

One Health Initiative- is a movement to forge co-equal, all inclusive collaborations between physicians, osteopathic physicians, veterinarians, dentists, nurses and other scientific-health and environmentally related disciplines, including the American Medical Association, American Veterinary Medical Association, American Academy of Pediatrics, American Nurses Association, American Association of Public Health Physicians, the American Society of Tropical Medicine and Hygiene,

the Centers for Disease Control and Prevention (CDC), the United States Department of Agriculture (USDA), and the U.S. National Environmental Health Association (NEHA). Additionally, more than 850 prominent scientists, physicians and veterinarians worldwide have endorsed the initiative.

Via <http://www.onehealthinitiative.com/>

Global Health- the practice and study of health aimed at improving health worldwide

Wearable device- technology that can be worn by the user. Usually provides information on health and fitness.

Blog- a website or web page run by a person or small group written in an informal tone

Technical drawing- a visual representation of an object that includes its' parts and functions

## Author Information

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## Rubrics for Assessment

Research	Discussion	Organization
<p>1 Research is lacking. Mentions only a few goals of One Health Initiative.</p>	<p>1 Student does not identify the health issue their device will benefit. Student does not mention the impact their device will have on the world. Student does not respond to other groups' blog.</p>	<p>1 Student product is not neat or coherent. There are grammatical errors.</p>
<p>2 Research is mostly complete. Mentions most goals of One Health Initiative.</p>	<p>2 Student explains the issue they chose, but does not elaborate on what that issue is. Student does not address challenges or how their device will benefit the world. Student responds to only one groups' blog.</p>	<p>2 The product is neat and free of most grammatical errors. The product is organized into categories, not just a large block of text.</p>
<p>3 Research is accurate and complete. Mentions all goals of One Health initiative.</p>	<p>3 Student clearly details the issues surrounding the health issue they have chosen. Student presents challenges to their topic and how their device would</p>	<p>3 The product is well organized and free of grammatical errors. The overall aesthetic of the blog post is easy to read</p>

	positively impact the world. Student responds to two groups' blog.	and attention grabbing. Student uses graphics.
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Rubric for device design

Device Functionality	Organization	Benefits a Specific Population
1 Device would not reasonably function.	1 Device explanation and drawing are not clear, missing dimensions and specifications. Is not neatly organized.	1 Device does not apply to a specific population. Device application is not mentioned.
2 Device could function in theory.	2 Device explanation and drawing is clear, but does not have specifications or parts clearly labeled.	2 Device could benefit a population but is not explicitly stated.
3 Device could reasonably function well if built from this idea.	3 Device explanation and drawing are clear, clearly labeled dimensions and specifications. Is neatly organized.	3 Device application and target population is explicitly and fully explained.