

Introduction to the Epidemiology of the COVID-19 Pandemic

Featuring Dr. Rhea Coler and Dr. Whitney Harrington

This is a **PREVIEW** of Introduction to the Epidemiology of the COVID-19 Pandemic: Featuring Infectious Disease Researchers (1 Lesson).

The full curriculum includes one classroom lesson with a video featuring two scientist at Seattle Children's Research Institute.

To request the full version of this curriculum at no cost, go to <https://www.adventurelab.org/nih-sepa-grant-project.aspx> and fill out the request form.

Lesson Author: Seattle Children's

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How to decide which version is best for your classroom:

Where are you located?	How much time is available?	How many classes are participating?	Version	Description
Western Washington	5 lessons, including a 1-hour mobile lab visit	3-5 (30 students max per class)	Investigations in Infectious Disease Mobile Lab Version	5 days, includes a mobile Science Adventure Lab visit to your school
Puget Sound area	5 lessons, including a 3-hour field trip	1 (32 students max)	Investigations in Infectious Disease Field Trip Version	5 days, includes a field trip to the Science Discovery Lab in downtown Seattle; transportation assistance is available
Any location	4 lessons	Not limited	Investigations in Infectious Disease Classroom Version	Classroom activities (4 days)
Any location	2 lessons	Not limited	Investigations in Infectious Disease Using the Claim, Evidence, Reasoning Framework	Classroom activities (2 days)
Any location	1 lesson	Not limited	Introduction to Epidemiology of the COVID-19 Pandemic: Featuring Infectious Disease Researchers	Video and reading
Any location	20 minutes	Not limited	Epidemiological Investigation of the COVID-19 Pandemic Student Reading	Reading

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Teacher Guide

Grades: 7-9

Subject: Science, ELA

Estimated Time: 50-60 minutes

Lesson Overview: Students will be introduced to the steps in an epidemiological investigation using the COVID-19 pandemic as an example. They will read about the three general parts of an epidemiological investigation, which are 1) Gathering information and preparing case reports, 2) Defining how the infection is spreading and identifying the source, and 3) Implementing control and prevention measures. Students will watch a video featuring Dr. Rhea Coler and Dr. Whitney Harrington of Seattle Children's that supplements the reading.

Learning Targets:

1. I can identify the three parts in an epidemiological investigation.
 - a. Students should be able to identify the following: 1) Gathering information and preparing case reports, 2) Defining how the infection is spreading and identifying the source, and 3) Implement control and prevention measures.
2. I can describe two examples of how epidemiology was used to investigate and respond to the COVID-19 pandemic.
 - a. Students should be able to describe two examples such as, preparation of case reports, classification of the infections (outbreak, epidemic, pandemic), development of a reliable test, creation of a vaccine.

Key Vocabulary:

- Epidemic
- Epidemic Curve
- Epidemiology
- Epidemiologist
- Outbreak
- Pandemic
- Vaccine

Materials Needed:

- Teacher's guide
- Student Reading: *Epidemiological Investigation of the COVID-19 Pandemic* (pages 5-8)

Lesson Plan: Steps of an Epidemiological Investigation

1. Introduction to the article, *Epidemiological Investigation of the COVID-19 Pandemic*. This article is about how an epidemiological investigation is performed using the COVID-19 pandemic as an example.
2. Distribute the article: *Epidemiological Investigation of the COVID-19 Pandemic*.
3. Students will read the article individually or as a group activity.
4. Introduce the video.
5. Play the video.
6. Optional: Have a class discussion about issues raised and/or points of interest from the video.

Phases of an Epidemiological Investigation

Conducting an epidemiological investigation requires a whole team of professionals including field investigators, epidemiologists, laboratory scientists, doctors and public health officials. While there are numerous steps in an epidemiological investigation, they can be grouped into three general phases for simplicity: 1) Gathering information and preparing case reports, 2) Defining how the infection is spreading and identifying the source, and 3) Implementing control and prevention measures.

Phase 1: Gathering information and preparing case reports:

- Field investigators verify key information such as...

Phase 2: Defining how the infection is spreading and identifying the source:

- Epidemiologists plot an epidemic curve to determine ...

Phase 3: Implementing control and prevention measures:

- Scientists establish a reliable test for the infection that doctors can use to ...

