My NASA Data - Interactive Models

Exploring Patterns of Human Geography and COVID-19



COVID-19 Cases Around the World

Population Density (Persons Per Square Kilometer) 0 25 1,000+ Cumulative Total Number of COVID-19 Cases 10,000,000+ 5,000,000 - 10,000,000 1,000,000 - 5,000,000 1 - 1,000,000

Since December, 2019, COVID-19 pandemic has touched nearly every country on the planet. The map to the right displays the total number of COVID-19 cases each country has had since the start of the pandemic.





Learning Objectives

- Students will describe how the spread of COVID-19 is affected by population density.
- Students will explain why patterns in the spread of COVID-19 are happening over time.

Essential Questions

- What factors influence the spread of COVID-19?
- How is the spread of COVID-19 affected by human behavior?
- How do we quantitatively describe and compare countries' total COVID-19 cases?

Materials Required

- Computer/Tablet
- Internet Access
- Google Form (optional)
- Link to Exploring Patterns of Human Geography and COVID-19 Interactive Model

Teacher Answer Key

Teachers who are interested in receiving the answer key, please complete the <u>Teacher Key Request</u> and <u>Verification Form</u>. We verify that requestors are teachers prior to sending access to the answer keys as we've had many students try to pass as teachers to gain access.

Grade Band

• 6-8

• 9-12

Supported NGSS Performance Expectations

- <u>MS-LS1-5: Construct a scientific explanation based on evidence for how environmental and</u> genetic factors influence the growth of organisms.
- <u>MS-LS2-1: Analyze and interpret data to provide evidence for the effects of resource</u> availability on organisms and populations of organisms in an ecosystem.
- <u>MS-LS2-4: Construct an argument supported by empirical evidence that changes to physical</u> <u>or biological components of an ecosystem affect populations.</u>
- <u>HS-ESS3-6</u>: Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.

NGSS Disciplinary Core Ideas

- LS1B: Growth and Development of Organisms
- LS2A: Interdependent Relationships in Ecosystems
- LS2C: Ecosystems Dynamics, Functioning and Resilience
- ESS3C: Human Impacts on Earth Systems

Science and Engineering Practices

- Developing and Using Models
- Analyzing and Interpreting Data
- Constructing Explanations and Designing Solutions

Crosscutting Concepts

- Patterns
- Cause and Effect
- Stability and Change

Related Resources

• Exploring Patterns of Human Geography and COVID-19 Interactive Model