WHY STUDY GEOGRAPHY?

Learning about the world is exciting! We learn about new places by seeing what the physical environment is like and the different ways in which people live. It helps us learn about "What is where? Why there? Why care?" (**Figure I.1**).

WHAT IS WHERE?

Everything happens somewhere. At the heart of geography is the importance of location—the "where." Human geography is about understanding the patterns and features of the human environment, such as settlement patterns, population growth, and growing economies. These patterns and features can include where we have settled and where population changes are occurring.

WHY THERE?

The job of the geographer is to connect the "what" with the "where." The next question to ask is "Why there?" As geographers learn more about the features of the human environment, they look at how these features were created, the relationships they have to people and places around them, and the patterns they form. Looking for connections and patterns helps geographers answer the question "Why there?"

WHY CARE?

Learning about the world is challenging. Sometimes we look at events taking place around the world and feel that we can do nothing to help. Taking personal action on issues is a key application of geographic learning. Using geographic skills can help us take complex issues and break them down to a point where we can begin to make personal connections with what is happening. These skills can be applied to situations near and far from home.

Geographers ask how they can make the world a better place to live in. Being an active geographic learner can help you be a better global citizen.

WHAT IS WHERE?

This question asks
- about the features of the human environment
- about the specific or precise location (for example, GPS coordinates)
- where something is in relation to the places around it

WHY THERE?

This question asks
- why this settlement or human activity is located there
- about the connections between people and places
- about the patterns of settlement
- how people have changed the environment

WHY CARE?

This question asks
- about the importance of the issue
- how to make the world a better and more sustainable place to live
- about the rights and responsibilities of a global citizen

FIGURE I.1 The three critical questions of geography

CASE STUDY

THE EBOLA EPIDEMIC IN WEST AFRICA

Imagine living in a place where many people around you were dying from a mysterious illness. Beginning in March 2014, this was the situation in the West African country of Liberia. The Ebola virus (an often fatal disease that causes fever and severe internal bleeding) spread to Liberia from neighbouring Guinea. Since the disease spread in a rural part of Liberia before it entered the crowded cities, more than four months passed before the World Health Organization declared the outbreak a "Public Health Emergency of International Concern." By then, hundreds of people had contracted Ebola and spread it to family members, neighbours, and passersby.

THE FAILURE OF LOCAL CONTROL EFFORTS

By November 2014, over 13 000 people in West Africa had contracted Ebola, and at least 35 percent of those infected had died. Why could healthcare officials not stop the virus from spreading? Poverty was one of the main reasons. About 80 percent of the population of Liberia lives in poverty, with average yearly incomes reaching only $700. Most of the people, hospitals, and clinics did not have enough money and resources to access important supplies for controlling viruses, such as safe water and soap. Hospitals and clinics were few and far between. As well, many healthcare workers were among the early victims of the disease.

GLOBAL RESPONSE

The rest of the world was startled by the rate at which Ebola was spreading. Ebola turned up in nearby Sierra Leone and even Senegal. Then it jumped to Nigeria. The World Health Organization predicted a deadly global epidemic if actions were not taken. Led by groups such as Doctors Without Borders, infectious disease experts and medical supplies were flown into the area. Canada supplied two high-tech labs and millions of dollars' worth of equipment, such as gloves and masks. A potential vaccine being developed in Canadian labs was rushed through testing. Thousands of Liberians were quickly trained to treat high-risk patients. They were educated on how to prevent person-to-person spread and were supplied with the necessary protective equipment (**Figure I.2**).

FIGURE I.2 The Ebola virus is spread by touching an infected person and by bodily fluids. However, healthcare workers in protective equipment can safely work with patients suffering from the Ebola virus.

THE DISTRIBUTION OF THE OUTBREAK IN WEST AFRICA

Examining a map of West Africa can help explain how Ebola spread so quickly throughout the region. Maps are graphic or visual representations of what is happening on Earth using colours, symbols, and labels to tell their story. When reading a map, it is helpful to first look at several essentials that provide information: the title, scale, legend, and north arrow, or compass rose.

You can see the spatial distribution of the Ebola outbreak throughout Guinea, Sierra Leone, and Liberia in **Figure I.3**. By examining the map, you will see the extent and significance of the outbreak by region and where the medical centres for testing and treatment were located. The map shows that the outbreak was the most severe in the capital cities of Freetown and Monrovia and at the border between Sierra Leone and Liberia.

The dark red areas in **Figure I.3** have the highest total number of cases: therefore, those areas are also where the majority of healthcare options are located. Due to widespread poverty and the location of the healthcare options, it would be very difficult to receive treatment for Ebola if you did not live within travelling distance of a treatment unit. Ebola treatment units are healthcare centres that were established to provide care for Ebola patients and to help contain the epidemic (**Figure I.4**).

Ebola Outbreak in West Africa, 2014

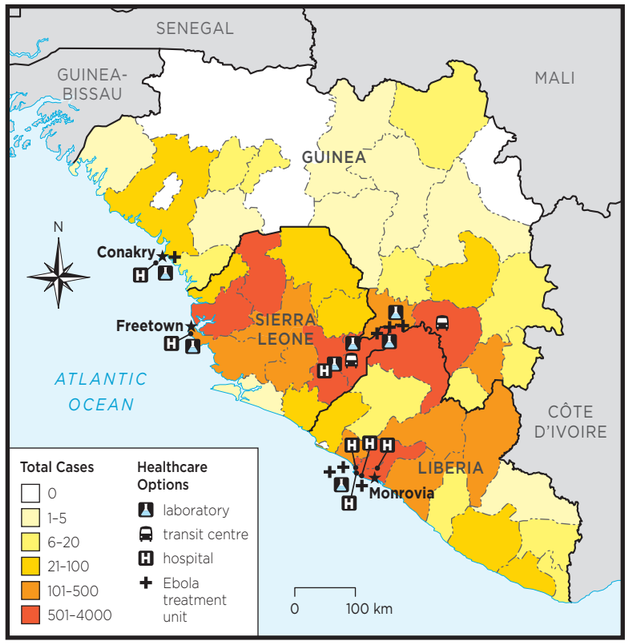

FIGURE I.3 This map shows the distribution of Ebola cases and the location of treatment units throughout the regions in Guinea, Sierra Leone, and Liberia as of October 29, 2014.

FIGURE I.4 A nurse in protective equipment assists an Ebola patient at a treatment unit in Sierra Leone.

READING AND ANALYZING CASE COUNTS

The World Health Organization tracks case counts, or the number of reported cases, and the spread of the disease. Data, such as case counts, can help tell the story about a place, problem, or issue. It is important to know the source and accuracy of any collected data. Data can come from international organizations, government departments, and surveys by interested groups and researchers. There are various ways to present data. It can be organized into tables, such as **Figure I.5**, or displayed in different types of graphs and maps. These methods help us recognize patterns and interrelationships.

When we obtain data, we can work with it as is, or we can use it in calculations that will expand our understanding. An example might be to change the number of Ebola deaths into a percentage of the total cases. Sometimes we can use data to calculate ratios, the mean, or the median. Analyzing data in this way helps us understand how the data is grouped. Is it spread out across a wide range or concentrated? Having access to data allows us to extend our analysis and get answers to important questions.

Actual numbers are often difficult to grasp until we convert them to a percentage or ratio. For example, the case count data can become more significant if we calculate what percentage of all Ebola cases in the outbreak area the numbers represent. According to **Figure I.5**, as of October 2014, 6535 cases of Ebola were found in Liberia. Since we know that the total case count is 13 676, we can calculate that 47 percent of all cases in the outbreak area are in Liberia. In other words, at the time the data was collected, one of every two cases of Ebola was found in Liberia.

Country	Total Cases	Total Deaths	Percentage Deaths
Guinea	1906	997	52.3%
Liberia	6535	2413	36.9%
Sierra Leone	5235	1500	28.7%
Total	**13 676**	**4910**	**35.9%**

FIGURE I.5 Ebola case counts by selected country in West Africa, October 29, 2014

WINNING THE FIGHT?

An important strategy to control the spread of infectious diseases, like Ebola, is containment. The borders around the infected countries were temporarily closed so people could not leave. However, this had a devastating effect on economic activities, including trade and movement of food supplies in the area, making poverty even more severe. When patients in Spain and the United States were diagnosed with Ebola, some airports started testing travellers from West Africa for signs of illness. Travellers were asked a series of questions to assess their risk of exposure and were tested for fever, which is one of the main symptoms of Ebola. Efforts to control the disease then focused on preventing its spread within Liberia using proper methods of dealing with the sick.

Even with outside help, in September 2014, the Centers for Disease Control and Prevention predicted that the total number of cases of Ebola in Sierra Leone and Liberia could reach 1.4 million by early 2015.

EXPLORE THE ISSUE

1. **What conditions in Liberia helped Ebola spread?**
2. **Examine the map in Figure I.3. Describe the pattern of the outbreak in West Africa. Use terms such as *concentrated* and *spread out*. Suggest two reasons for the patterns that you see.**
3. **Compare the map of the Ebola outbreak in West Africa (Figure I.3) with the table of case counts (Figure I.5). What can you learn about the outbreak from the table that is not shown in the map?**
4. **Could a disease such as Ebola become an epidemic in Canada? Explain your answer.**
5. **What role should the rest of the world play when a disease spreads in one or more countries?**

THINKING LIKE

A GEOGRAPHER

Studying geography helps you develop ways of thinking about the world. There are four geographic thinking concepts that are unique to geographic learning: interrelationships, spatial significance, geographic perspective, and patterns and trends. You can explore the Ebola case study by examining it through the lens of each geographic thinking concept.

INTERRELATIONSHIPS

When geographers look at the significance of a place, they also look at **interrelationships**. Interrelationships are the connections between parts in one system, or between two systems, such as between the natural environment and human environments.

Geographers examine interrelationships by asking

- What characteristics do the physical and human environments in a specific area have?
- How are these systems connected?
- How do people change the physical environment?
- How do these connections affect the lives of people living in a specific area?

Ebola was first passed to humans from animals in 1976. The Ebola outbreak of 2014 occurred in both rural and urban environments. However, there is a strong connection between large numbers of people living in poor conditions and the number of Ebola cases found there.

SPATIAL SIGNIFICANCE

Spatial refers to something that exists or occurs in a space. Spatial significance relates specifically to where places are located on the planet. To indicate where a place is, geographers talk about its

- **absolute location:** the precise position of a place; for example, Monrovia, the capital of Liberia, is located at latitude 6.31°N, longitude 10.80°W
- **relative location:** where a location is compared to other places around it; for example, Liberia is located in West Africa

Significance means importance. So **spatial significance** can be defined as the importance of a place and those things that are around it.

On the map of West Africa (**Figure I.3**), we can see the location of the Ebola-affected countries and their neighbours. The map also shows the extent of the disease—it was confined to just three of the countries shown. It was important that Ebola did not spread to neighbouring countries. It was also spatially significant that the limited number of treatment and testing centres for Ebola were concentrated in the major cities.

GEOGRAPHIC PERSPECTIVE

Geographers study a wide range of issues facing people and the planet today. Every issue has supporters and opponents that reflect environmental, political, economic, and social values. It is important to know and examine all **perspectives**, or points of view, to determine a plan of action to resolve the issue. This way, we understand how our plan will affect others.

These various perspectives are based on the beliefs and value systems of the people and groups involved. Geographers need to listen to what people say about a specific problem and consider the following values:

- **environmental:** related to the use of the natural world
- **political:** related to decisions made by a governing body
- **economic:** related to opportunities to make money in order to meet needs and address wants
- **cultural/social:** related to protection of a society

The Ebola case demonstrates several geographic perspectives. From a social perspective, it was critical that the disease was immediately contained. Politically, many countries worked together to help control and eliminate Ebola. However, the plan of action to temporarily close the borders around the infected countries failed to consider the economic perspective. Economic activity and trade came to a standstill and food supplies were limited. It is important to consider possible impacts of plans on all four values prior to taking action.

PATTERNS AND TRENDS

Once we know about a specific place, we want to compare its characteristics with characteristics of other places. Comparing helps us to determine similarities and differences—that is, whether there are any patterns. **Patterns** are arrangements or similarities in characteristics. **Trends** are patterns in how something is changing or developing over time. As you learn about the characteristics of the human environment, think about the patterns that exist and ask questions about them, such as the following:

- What characteristics are similar or repeat in different places?
- What causes these patterns?
- Do all places have similar patterns?
- How has the pattern changed over time?
- What might happen in the future?
- How do these patterns affect the lives of people living there?

Looking for patterns and trends will help you expand your understanding of the world around you.

When the Ebola outbreak began, the early pattern showed it spreading beyond the three countries of Guinea, Liberia, and Sierra Leone. It spread to Senegal and Nigeria, but they were able to control it. As the outbreak grew in case numbers, more and more people were at risk. Through air travel, the disease made its way to Spain and the United States. This started a trend of increased screening of passengers at airports around the world and even the cancellation of some flights into West Africa.

WHAT IS GEOGRAPHIC INQUIRY?

In any geography course, you will be asked to study topics that connect to the physical environment, human geography, and related issues. Doing research can seem like a very complicated process, but by breaking it down into smaller pieces, you can make it more manageable. Once you have a topic or issue that you want to learn more about, you can gather, organize, and analyze information in various stages. How can you use the inquiry process to examine the Ebola case study?

FORMULATE QUESTIONS

Good inquiry questions

- are important and meaningful to us
- are open-ended; they do not have just one final and complete answer
- can be answered by gathering evidence
- need support; to explain and prove your answers, you need to provide evidence and facts

It can be challenging to come up with a good inquiry question, but strong questions can help guide your research.

What factors made it difficult to control the spread of Ebola following the outbreak?

GATHER AND ORGANIZE

Collect your data, keeping your inquiry question in mind. Your data could come from field studies, primary sources, and secondary sources. Primary sources are maps, photographs, satellite images, letters, journals, and other types of documents. Secondary sources are often based on analysis of primary data, such as documentaries, news articles, reference books, or websites. Organize your evidence so that you are using sources connected to your inquiry question.

What are the human geographic clues that tell you about living conditions in Liberia that may have contributed to the spread of Ebola? Where do you think the author might have found this information?

INTERPRET AND ANALYZE

Think about the evidence you collect. In geographic research, it is crucial to present a variety of perspectives. Try to uncover new details or perspectives. Look for ways that different pieces might fit together. Try to find patterns. When you interpret and analyze, you make inferences or best guesses based on the evidence.

Is there evidence that a variety of points of view are included in the Ebola case study?

COMMUNICATE

You can communicate your findings in many different ways, including spatial journals, blog posts, slideshows, and presentations. When you communicate, make sure your inquiry question, evidence, and conclusions are clear and engaging to your intended audience. When geographers communicate their findings effectively, people learn about the world around them.

If you were presenting the Ebola case study, what format would you use?

EVALUATE AND DRAW CONCLUSIONS

Evaluate your evidence by thinking about how it supports or doesn't support your inquiry question. Use your new understanding and what you already know to draw conclusions about your inquiry question. Your conclusions might be quite different from the answers you thought you would find. They might even spark a new inquiry question! Or you may not reach a conclusion because you need different sources of evidence. Then you may have to go through the inquiry process again. Remember that it's possible to draw many different conclusions from the same evidence, and sometimes there is no one "right" answer.

In the Ebola case study, what evidence could help you draw a logical conclusion about the factors making it difficult to control the spread of the disease?