



## MAPPING YOUR COMMUNITY

**OBJECTIVE:** In this activity set, students will develop an understanding of what GIS is and how it is used in their own communities. They will create maps of their own communities using the principles of GIS.

**ACTIVITY PACING:** This unit-based activity is designed to be a multi-day project that students can complete as they study the unit. A time estimate for completing this activity will depend upon how much class time the student groups are allowed to take for research and preparation. If done in class, this activity will take three to four class periods.

**TEACHER PREPARATION:** To complete this activity, you will need:

- Internet access
  - Copies of local newspapers published within the last year
  - Blank maps of your community
1. The major idea for students to grasp in the following activities is that with a GIS, different geographical data sets *interact with each other*. Have the students think about a commute they regularly make in their own communities. Have students volunteer the routes they take to get from their home to school—whether by foot, car, bus, or bike. Ask: **How does a snowstorm affect their commute? A traffic accident? A broken stoplight?**

2. Divide the class into groups and assign the students various data sets to map. Ask students what kind of data is most relevant in their community. For example, in a predominantly rural area, physical characteristics of the community may be most relevant. In an urban area, students may focus on more detailed social factors, such as businesses, schools, or crime statistics.

3. When the class is done working in smaller groups, it would be helpful to have a large community map on which you can draw or “layer” their various data sets. As a whole group, encourage the students to see how all of these variables interact with each other in their community. The following discussion questions can facilitate a discussion in which students see their communities from this holistic perspective. Ask: **What are the assets of our community?** (*Try to get the students to think in terms of the positive aspects of the area in which they live. Encourage them to think of both physical and social characteristics.*) **What are the deficits of our community?** (*Ask the students to think about what is challenging about their community. What is needed or lacking? Encourage them to think of both social and physical characteristics.*)

# GIS Simulations

## Student Activity 1



### MAPPING YOUR COMMUNITY

Geographic Information Systems (GIS) allow one to use several different data sets to build a complete, multi-faceted understanding of a geographic question. Using GIS allows a geographer to layer different series of data together and then use that data combination to answer a complex problem that could not be adequately solved with each individual data set. In other words, GIS is like a sandwich of different geographic factors. In the following activities, you will work with your classmates to understand which “ingredients” go into the “sandwich” that is your community.



For this activity, you will be working in a group of no more than four people. Your group will research a particular geographic variable that exists in your community. Each person in your group will plot your group’s research findings on a map. Next, your group will partner with another group to share your two different maps. Your goal is to understand how these geographic variables interact with each other in your community.

#### What you will need:

- Internet access
- Copies of local newspapers published within the last year
- Blank maps of your community

### COMPLETING THE ACTIVITY

**Think About the Topic** Brainstorm with your group to create a list of the different physical and social factors that exist where you live.

- a. What are the major physical components? Look in the local section of some newspapers. What can be mapped? What is the climate like? What kinds of people live in your community? What kinds of businesses are there?

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## GIS Simulations 1 *Continued*



- b. Discuss these questions and any other geographic variables you can think of. Make a list of your ideas and work with your teacher to decide which variable you can research and plot on your own maps.

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**Gather Data** Think about ways you might go about collecting the community data you plan to map. Is your geographic variable social or physical? What part of your city government is responsible for this part of your community? For instance, the group may choose to map the location of all the community schools or to indicate the areas in your community with high rates of crime. You may want to contact your local officials and ask them where to find the information. You can also ask your teacher and librarian for help. Write down your research results in a sentence format first.

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**Prepare Data** Use your maps to plot the data you find. Discuss as a group what kind of legend to create. Remember, there are many ways to represent information on a map. Decide which colors and symbols to use and what additional information you think is important to include in your maps.

**Analyze Data** Share the maps and data you have created with another classroom group. If possible, add the other group's data layer to your maps, or create a new map that shows both of your group's geographic variables. Finally, discuss and write down all the ways you think these two geographic variables affect or interact with each other. What possible *relationship* might exist between these variables? For example, are schools affected by crime rates? You may want to look in the newspapers again and see if you can come up with any new connections.

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