

# GEOGRAPHY TOOLS

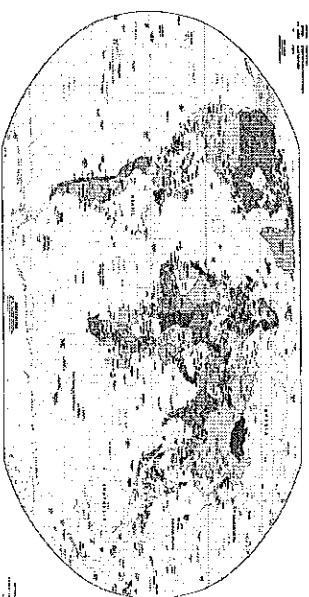
## What are the Different Types of Tools Geographers Use?

Geographers use all sorts of tools to help them investigate their questions. They commonly use *maps, globes, atlases, aerial photographs, satellite photographs, information graphics*, and a computer program called *GIS*. Read below to learn about different tools.

### Some Tools Geographers Use

#### Maps

A *map* is a flat representation of a part of Earth.



Geographers use many different types of maps. Maps can show lots of different information including the location of places on the world.

Maps use **projection** to try and display a round object (Earth) on a flat surface (a map). **Cartographers** (map-makers) have long

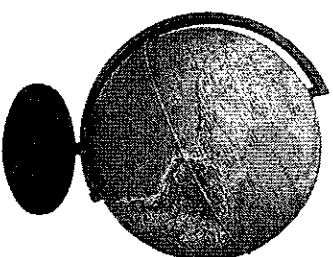
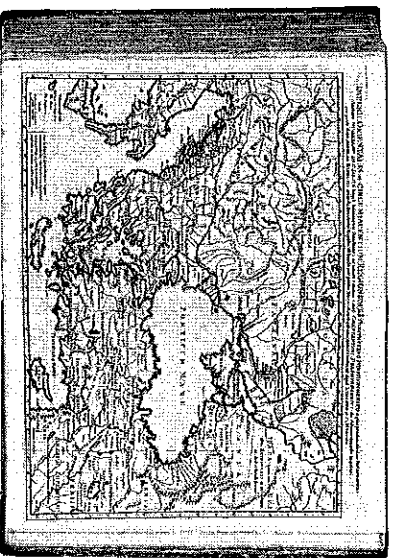
struggled with trying to find the most accurate projection to make maps with.

#### Atlas

An *atlas* is a book of maps.

An atlas contains maps of the world or a region of the world. Some atlases also include more information about the places they include in the maps.

Atlases can be very helpful for traveling, instead of bringing many maps, you can bring one atlas.



#### Globe

A *globe* is a model of the Earth, used to avoid **distortions** in spatial relations on the world.

Maps of the world are distorted from trying to make a round object fit on a flat surface. The globe is round, so it remains accurate.

The globe provides an accurate scale of how far apart locations are. You can also use a globe to get a comparison of the size of different locations.

#### Aerial Photographs

*Aerial photographs* are photographs taken from the sky and used to take measurements or create maps.

Aerial photographs can be taken from airplanes, balloons, or even kites.

The image on the right is an *aerial photo* of South Boston, MA. It was taken in 1978. You can download aerial photos at: <http://earthexplorer.usgs.gov>

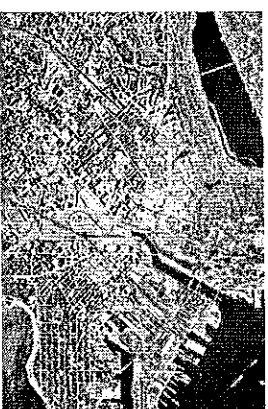


Image courtesy of the U.S. Geological Survey.

#### Satellite Photographs

*Satellite photographs* are like aerial photographs, but they are taken from space.

Satellite photographs can capture large areas of the Earth, but they can also zoom in pretty close.

The image on the left is a *satellite photo* of Marion Island, South Africa. Marion Island is a protected land and is only inhabited by researchers studying the island.



Image courtesy of the NASA Earth Observatory. Image created by Jesse Allen, using EO-1. All data provided courtesy of the NASA EO-1 team and the United States Geological Survey

### Information Graphics

**Information Graphics or Infographics** are visual symbols of data. They are images that show information using pictures or symbols.

Information graphics can be as simple as a **bar graph** or as complex as the image to the left.

The infographic on the left is a display of **land cover change** in the Mid-Atlantic between 1996–2006. This graphic shows that over 10 years, forests and wetlands have decreased, while other types of land cover, including developments have increased. The graphic does not represent actual locations of land cover, just numbers representing it.

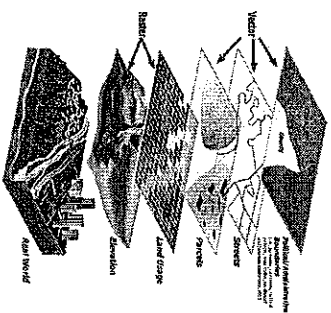


Image courtesy of the San Bernardino County Information Services Department

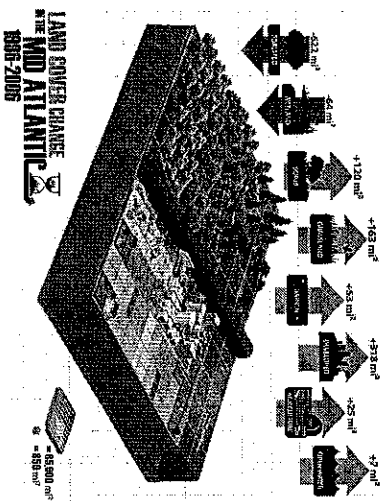


Image courtesy of the the National Oceanic and Atmospheric Administration (NOAA)

### GIS (Geographic Information System)

GIS is a computer based program used to store, manage, and analyze data

A GIS map is more than a map because it can pull up a lot of information. Geographers use GIS to help make decisions.

Imagine that you wanted to make sure schools were not near any factories that might pollute the air. With a GIS map, geographers can use the **database** (place that stores information) to show where all the schools are. They can then use the database to also show where all the factories are. The GIS helps geographers see all kinds of information and how it relates to locations.

*The image to the left is an example of how GIS layers information.*

### Geographer Interview

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Per: \_\_\_\_\_

## GEOGRAPHER INTERVIEW

*How Do Real People Use Geography?*

Read an interview of a real person who uses geography in his or her career. Answer the following questions based on the interview. Be ready to share your answers and ideas!

1. What is his or her job title?
2. How does this person use geography?
3. What kinds of questions does this person try to answer?
4. What tools does this person use?
5. Would you want this person on your team of zombie apocalypse survivors? Why?