The term **Geographic Information Systems** generally refers to computer **software** that is designed to capture, store, display, and analyze geographic information. GIS is a system in that it includes components other than software to make it work. These components are **hardware**, **data,** and knowledgeable systems **operators**. GIS was invented by a Canadian (Dr. Roger Tomlinson) in the 1960s; however, it only came into common use at universities in the early 1990s and in many Canadian school classrooms a decade later.

GIS software is often thought of as merely a mapmaking tool; however, it is much more than that. GIS is a seamless link between the geographic locations of features as shown on a map and the attribute data connected to those locations. In other words, rather than simply showing where places are, GIS includes data sets (information) about those places. If the data sets are changed, the map will automatically reflect the changes. Most GIS applications are based on either a map, air photo, or satellite image to show geographic locations of features in question, but are supported by both tabular and descriptive data that may not be apparent to the novice user. Maps and data can be edited with the click of a button to show new items, to make corrections, to reduce or enlarge the scale, to change colours, and so on.

GIS can also be used to analyze information and solve geographic problems. It is able to show data in graph format for comparison or for analysis of relationships between variables. GIS can identify features that match prescribed criteria determined by the operator and can also measure distances and areas. Furthermore, GIS software is equipped with design features for developing professional presentations, including the ability to hot-link symbols on a map to images or other digital files. The combination of all of these features and capabilities has resulted in the rapid growth of GIS and its use in education, industry, government, recreation, and any other applications that deal with geographic locations and data.

Geographic Information Systems is sometimes confused with **Global Positioning Systems** (GPS). GPS consists of hand-held receivers that pick up satellite signals that allow it to determine exact coordinates of features on the Earth. The locations of features determined in this manner can be downloaded into GIS software as data to be displayed on a map or aerial photograph.

The new K-S4 Manitoba social studies curriculum includes numerous knowledge- and skill-based outcomes that can be achieved using GIS software. These outcomes are listed on the Manitoba Education, Citizenship and Youth website <http://www.edu.gov.mb.ca>, following the links: Curriculum/Social Studies/GIS Resources. This website also contains an annotated bibliography of GIS resource materials, information about GIS training, as well as a number of GIS learning activities.

Manitoba Education, Citizenship and Youth has purchased a province-wide license for *ArcView* GIS software (versions 3.3 and 8.3) and *ArcCanada Data Sets*. If your school has not acquired GIS software, contact your school administration, systems operator, or Manitoba Education, Citizenship and Youth for information.