Hillsborough County Watershed Atlas Learning Kit

Developing Map Skills *Teacher's Guide*

Students use the Watershed Atlas website, compasses and USGS maps to develop map skills.

GRADE LEVEL: 6th -12th

SUBJECT AREA/COURSE: Environmental Science, Geography, Math

SUNSHINE STATE STANDARDS:

- Uses concrete and graphic models to derive formulas for finding perimeter, area, surface area, circumference, and volume of two- and three-dimensional shapes, including rectangular solids, cylinders, cones, and pyramids (MA.B.1.4)
- Selects and uses direct (measured) and indirect (not measured) methods of measurement as appropriate (MA.B.2.4)
- Uses a variety of maps, geographic technologies including geographic information systems (GIS) and satellite- produced imagery, and other advanced graphic representations to depict geographic problems. (SS.B.11.4.1)
- Knows that technological problems often create a demand for new scientific knowledge and that new technologies make it possible for scientists to extend their research in a way that advances science knows that technological problems often create a demand for new scientific knowledge and that new technologies make it possible for scientists to extend their research in a way that advances science (SC.H.3.4.2)
- Understands the advantages and disadvantages of using maps from different sources and different points of view (SS.B.1.4.1)

ACADEMIC OUTCOMES/LESSON OBJECTIVES:

1. Students will be able to discuss and demonstrate how certain terms are used when working with maps.
2. Students will be able to locate objects on a map using longitude and latitude.
3. Students will be able to recognize the shape of various water bodies by analyzing the contours of the bodies of water.
4. Students will organize data in a meaningful table.

TEACHER BACKGROUND INFORMATION: The instructor should be able to use a compass. There are many books available to explain the compass terms of bearing and heading. Simple outdoor activities can be done as a pre-lab to illustrate the meaning of these terms. Locating objects on your campus would be a simple activity that could be done according to compass directions.

The teacher will also need to select the study lakes on the website and obtain maps of Hillsborough County, Florida or appropriate USGS Quadrangle maps. The USGS Quadrangle maps are available for purchase online or from outdoor sport stores. Check to see if you have access to the newest maps. (Save older maps for land use change studies.) Assign the lakes to groups of students in an order such that the maps can be shared by student teams.

MATERIALS NEEDED (STUDENTS/TEACHER): Access to computers, Internet connections with www.Hillsborough.WaterAtlas.org bookmarked, compasses (for basic skills), USGS Quadrangle maps or street maps of the study areas, copies of the student handouts.

Name: Date:

Developing Map Skills *Teacher's Guide*

SAFETY: If an outdoor compass practice is included, discuss behavior and performance expectations.

VOCABULARY: longitude, latitude, bearing, quadrangle map, elevation and contour intervals, degrees, minutes, and seconds

AUTHOR: Brian Keyes: Brian_Keyes@scps.k12.fl.us. – Modified from the original lesson plans created for the Seminole County Watershed Atlas.

Name: Date: