Using Online Maps in Your Courses

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Maps are an important way to explore, understand, and present the world around us. In the past, access to and the use of maps has been somewhat challenging and limited to those who were experienced with geographic information system (GIS) and mapping software. This has been changing quite rapidly with Google Maps, Google Earth, Bing Maps, ArcGIS.com, and many other online sources of spatial information and maps. Many of these resources provide dynamic maps and video paths as we move through our environment. This workshop will explore the new and emerging world of online mapping and discuss uses for teaching and learning.

Objectives
       1 - provide an overview of what's out there
       2 - demonstrate functionality
       3 - give participants opportunity to locate and explore
       4 - discuss how it might fit into teaching and learning

Geography - from Wikipedia...
       "Geography (from Greek γεωγραφία - geographia, lit. "earth describe-write"[1]) is the science that deals with the study of the Earth and its lands, features, inhabitants, and phenomena."

Map - from Wikipedia...
       "A map is a visual representation of an area—a symbolic depiction highlighting relationships between elements of that space such as objects, regions, and themes."

Many sources of map/geographic/spatial information
       Derived from geographic information systems (GIS) - added other technologies - GPS, aerial photography, remote sensing (i.e.satellite, radar)
       Use many data sources - roads, census, vegetation, land use, etc.

Static Maps, Interactive Maps
       Online Mapping Programs (web-based), Online Geographic Information Systems (web-based)
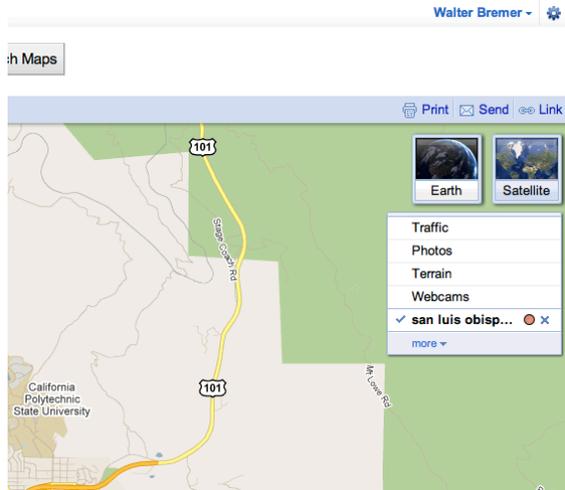
Paid/Free/Open Source Mapping
       Open source community - OpenMaps, OpenStreetMap, Open Geospatial Consortium, Inc.® (OGC), openGIS, and more

Google Maps/MapQuest/Bing Maps
       Search, routing (directions), attributes on maps - i.e. parks
       Terrain, satellite, streets, traffic, street view

Google Maps controls expand as you "mouse-over" Satellite or Map:

** illustrate searches **

Google Earth
  Search, route, paths, attributes
  Terrain
  Buildings
  Photos

  From Google Earth Help:

  "The Google Earth navigation controls offer the same type of navigation action that you can achieve with mouse navigation. In addition, you can use the controls to zoom and swoop (perhaps for a perspective on terrain) or to rotate your view. The following diagram shows the controls and explains their functions."
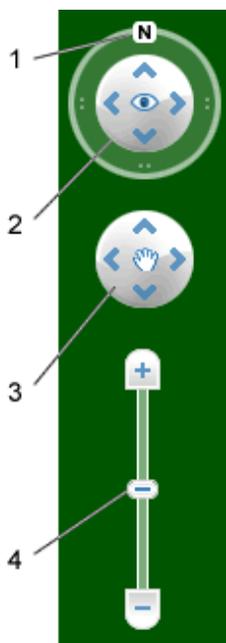
1. Click the north-up button to reset the view so that north is at the top of the screen. Click and drag the ring to rotate your view.
2. Use the Look joystick to look around from a single vantage point, as if you were turning your head. Click an arrow to look in that direction or continue to press down on the mouse button to change your view. After clicking an arrow, move the mouse around on the joystick to change the direction of motion.
3. Use the Move joystick to move your position from one place to another. Click an arrow to look in that direction or continue to press down on the mouse button to change your view. After clicking an arrow, move the mouse around on the joystick to change the direction of motion.
4. Use the zoom slider to zoom in or out (+ to zoom in, - to zoom out) or click the icons at the end of the slider. As you move closer to the ground, Google Earth swoops (tilts) to change your viewing angle to be parallel to the Earth's surface. You can turn off this automatic tilt (Tools > Options > Navigation > Navigation controls; Mac: Google Earth > Preferences > Navigation > Navigation controls).

You can also use the keyboard to control navigation. See 3D Viewer Navigation in Keyboard Controls for more information.

** illustrate searches **

City/County/State/Federal Sites

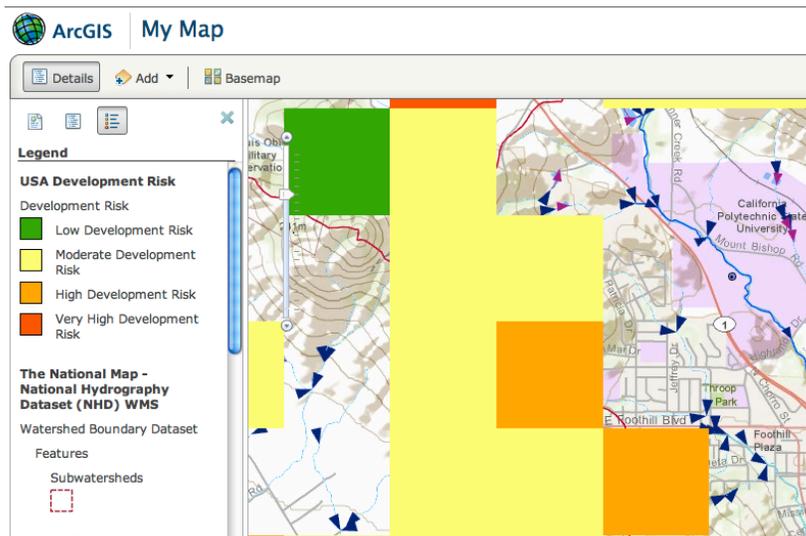Provide information to public, save costs
Inform Public
show sites

ArcGIS.com

Community of people
Incorporate many sources
Base on ESRI (Environmental Systems Research Institute) software

** illustrate searches, printing**

iPad Apps

Maps
Maplets
ArcGIS
Trails
Yahoo Sketch
Many navigation apps
And many more...

Mapping Web Sites

http://maps.google.com/
http://www.mapquest.com/
http://www.bing.com/maps/
http://openstreetmap.org

http://www.ci.san-luis-obispo.ca.us/publicworks/gishome.asp
http://www.slocounty.ca.gov/planning/zoning.htm
http://arcims.webgis.net/nc/burke/
http://mmgis.marinmap.org/dnn/

http://www.countyofsb.org/itd/gis/default.aspx?id=21448

http://landsat.usgs.gov/tools_featured.php
http://nationalatlas.gov/mapmaker
http://www.census.gov/geo/www/2010census/

http://www.HistoricAerials.com/

http://www.esri.com
http://www.arcgis.com/
http://www.esri.com/landsat-imagery/index.html