



## Professional Development Workshop on Integrating Geospatial Technology into the HS Classroom

### Online Resources

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GeoTech Consortium of Western New York - <http://nygeographicalliance.org/node/36>

ArcGIS Online - <http://www.arcgis.com>

ArcGIS Online Help - <https://doc.arcgis.com/en/arcgis-online/>

Learn ArcGIS Online lesson gallery - <https://learn.arcgis.com/en/gallery/>

StoryMaps Gallery - <http://storymaps.arcgis.com/en/gallery>

Esri's ConnectED website - <http://www.esri.com/connected>

Esri's Education Community - <http://edcommunity.esri.com/>

#### Instructional Materials:

A variety of subject-focused, standards-based instructional materials is available to enhance inquiry-based learning with students. All activities are free and completely online. The instructional materials require no installations or logins and are device neutral.

- Geolnquiries for Earth Science, US History, Human Geography, and Environmental Science
  - Get short and easy-to-use instructional activities for the earth science classroom that are designed to enhance teaching of various subjects through maps.
  - Recommended grades: 6-9
  - Time per lesson: 15 minutes
  - Activities available at <http://edcommunity.esri.com/geoinquiries>
  
- Mapping Our World
  - Provide structured lessons in geography, social studies, and environmental science using ArcGIS Online software.
  - Recommended grades: 6-12
  - Time per lesson: 45-90 minutes
  - Lessons available at [edcommunity.esri.com/MOW](http://edcommunity.esri.com/MOW)

- Thinking Spatially Using GIS
  - This collection enhances elementary geography in a 1:1 setting. Student worksheets and extensive teacher materials are available.
  - Recommended grades: 4-6
  - Time per lesson: 30-60 minutes
  - Lessons available at [edcommunity.esri.com/TSG](http://edcommunity.esri.com/TSG)

**Penn State Geospatial Revolution website** - <http://geospatialrevolution.psu.edu/>

- Video episodes and learning materials for grades 7-12 are available

### **AAG GeoSTART – Teaching Earth Science**

[http://www.aag.org/cs/education/k12\\_and\\_teacher\\_education/geostart\\_teaching\\_earth\\_science](http://www.aag.org/cs/education/k12_and_teacher_education/geostart_teaching_earth_science)

- GeoSTART materials will help middle/high school students learn state-of-the-art approaches to geography, earth science, and spatial thinking skills using NASA Earth Observing Missions remote sensing imagery and related data. Each activity is designed to engage one of the eight major modes of spatial thinking listed in the learning scaffold that is the primary focus of this NASA-funded curriculum project. The activities use this approach to study hurricanes.

As written, the activities contain all of the background information, instructions, satellite imagery, and other materials needed to support a very short but tightly-focused inquiry. This inquiry could fit into a larger curricular unit on hurricanes or natural hazards in many ways. In short, these lessons should be seen as miniature models of how to pose questions that can engage various modes of spatial thinking in order to solve a geographic problem.

The materials are available for free download in one total package format or by individual activities listed on the website. If activities are downloaded separately, it is still recommended to download the Teacher's Guide for instructional suggestions and answer keys to each activity.