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Online mapping tools
& resources to empower
K-12 students with
valuable geospatial
knowledge and skills

Presenter: Jenni Dahl
GIS Day, November 15, 2016

Think Geospatial

Tools and Resources for Geospatial Education



1

Esri Connect Ed Initiative

provides schools with free access to the mapping platform ArcGIS Online for Organizations, as well as lessons plans & tutorials

<http://www.esri.com/connected>



2 ArcGIS Online School Account

Advantage for the classroom:

- Teachers may create groups & assign sharing privileges
- Maps may be shared publicly, with the organization or groups

Share ✕

Share the item(s) with:

Everyone (public)

Think Geospatial

These groups:

1st Hour Geography

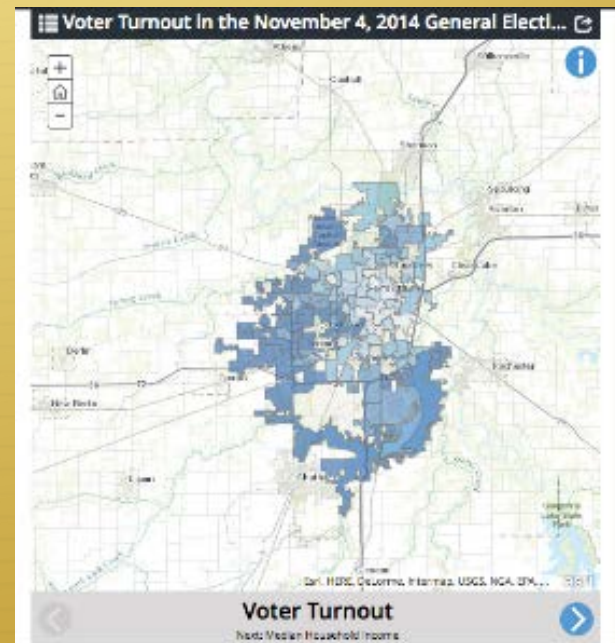
2nd Hour History

3rd Hour AP Human Geography

4th Hour Earth Science

5th Hour Environmental Science

These settings will replace the current settings.



Sample Interdisciplinary Activity:
Share maps with other classrooms

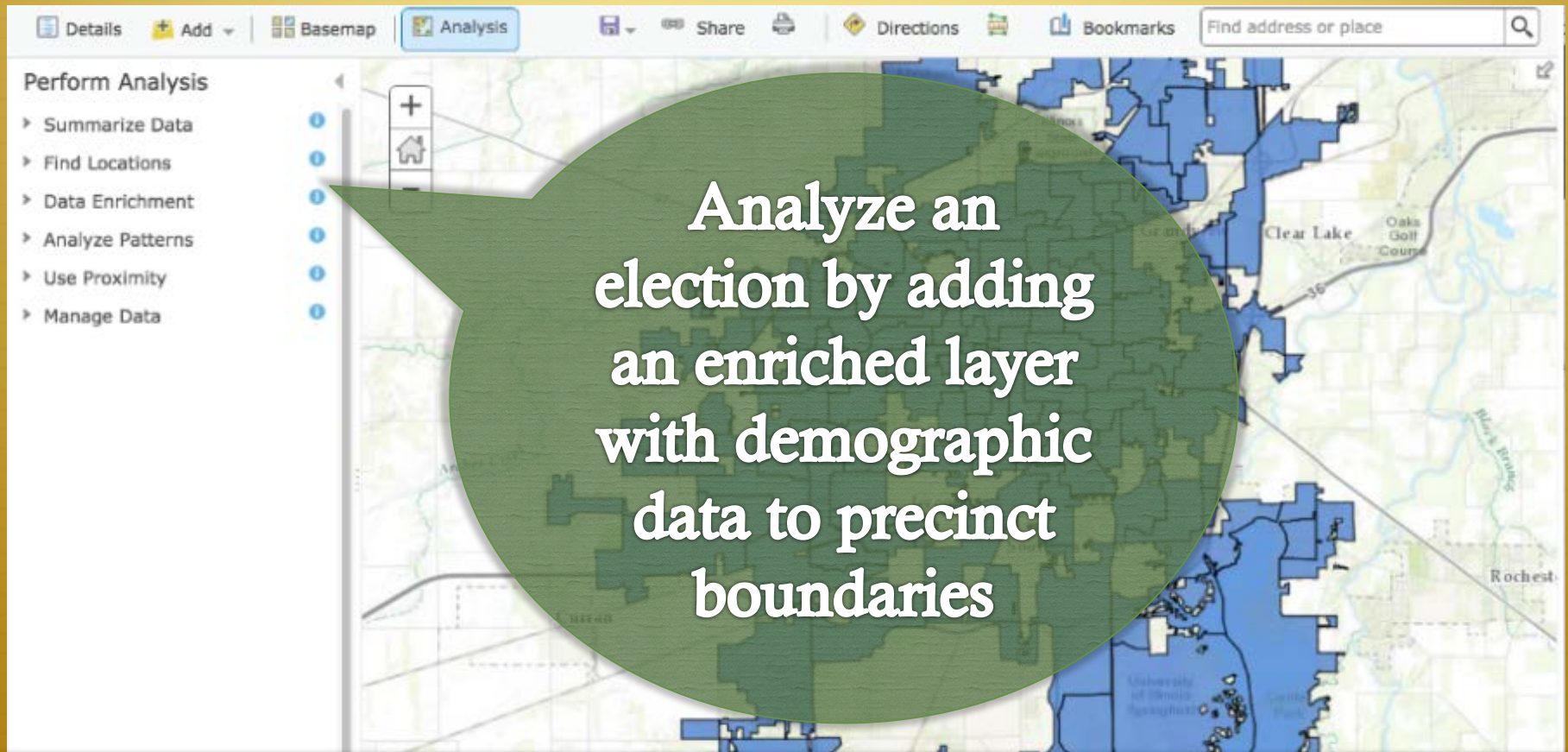
3 Quick & Easy Guided Tours to create an online map (ArcGIS Online)



Learn how to:
make a map,
style a map,
explore layers

GIS Activity: Log in to your ArcGIS account & click on “New Map” to see guided tours

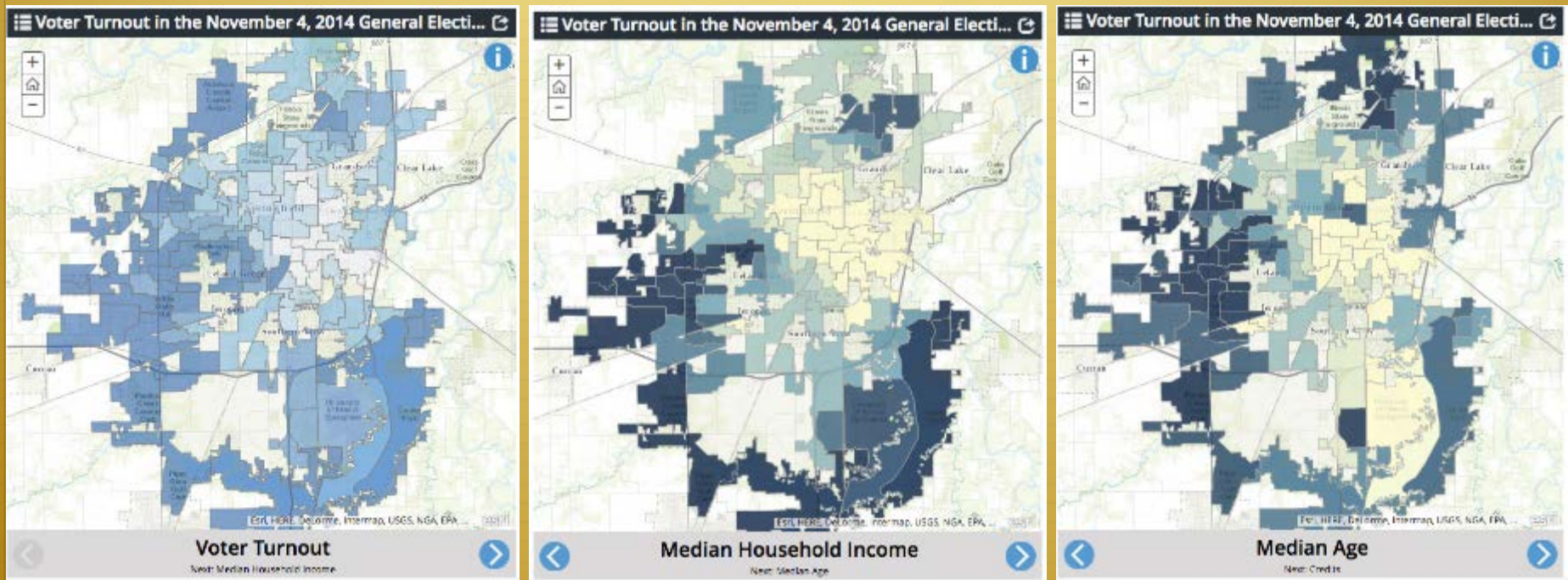
4 Powerful Analytical Tools (Arc GIS Online)



GIS Activity:
Explore map analysis tools

5

Tell Your Story with a Map with Story Maps Web Apps (ArcGIS Online)

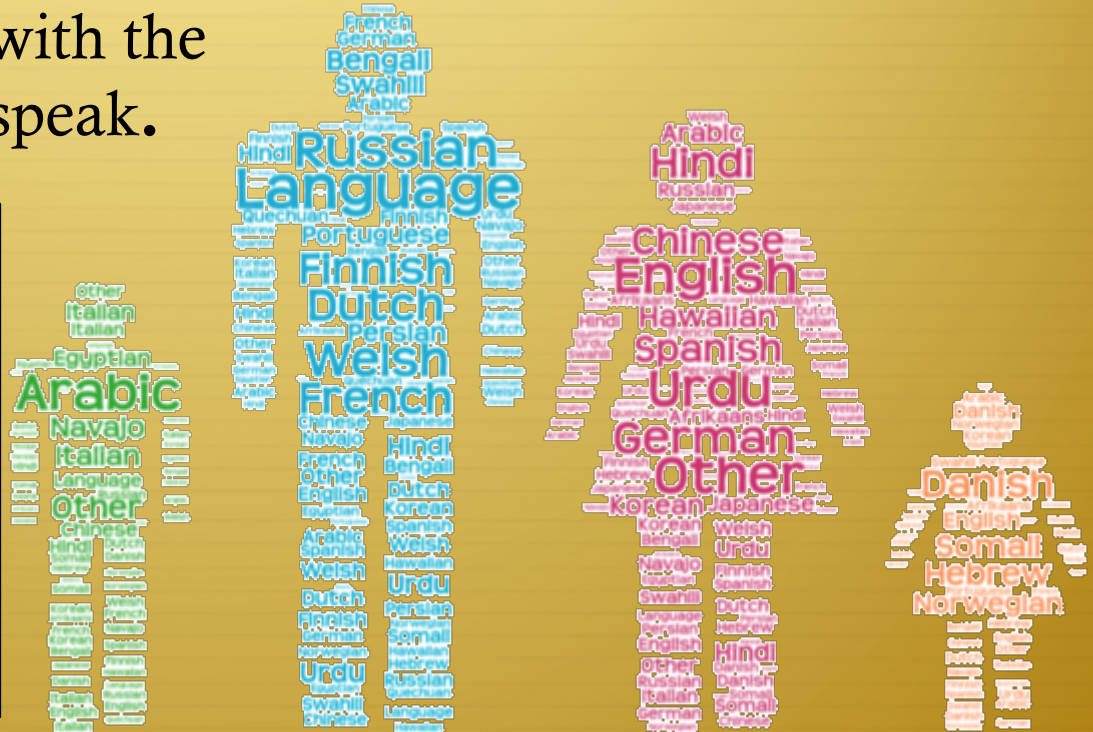


Sample Civics Lesson: Compare voter turnout with median household income and median age in your town.

6

Create a crowdsourced map with the Geoform web app (ArcGIS Online)

Online visitors are asked to fill out a form and then put a dot on the map with the number of languages they speak.



Human Geography Lesson: Do the number of languages spoken per person vary by country?

ILLINOIS GEOGRAPHIC ALLIANCE
Elevating Geography Education

Online Atlas of Illinois for K-12 Classrooms
<http://iga.illinoisstate.edu/atlas/>

The Illinois Geographic Alliance and Illinois State University have created a free online atlas tailored for AP Human Geography, but also with applications for any social studies classroom. This resource may be used by students as they explore and analyze the "where and why" of the State of Illinois. The 28 interactive maps on themes such as baseball teams, languages, religions, population change and transportation tell the story of Illinois in a visual and engaging way. It's all made possible by the online mapping platform, ArcGIS Online. The wealth of information contained in the atlas, including annotations for each of the maps as well as pop-up information based on scale, make the atlas the perfect reference material for the social studies virtual library!

This project is funded in whole by a grant from the National Geographic Society Education Foundation.

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeBCO, IGN, Kartegor, NLS, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, MapboxIndia, © OpenStreetMap contributors, and the GIS User Community

Online Illinois Atlas for K-12 Classrooms

28 Illinois-themed
maps with annotations,
links & videos

Created by the Illinois Geographic Alliance & ISU with
funding from the National Geographic Education Foundation

Online Illinois Atlas (Cont.)

Designed for AP Human Geography
Website: <http://iga.illinoisstate.edu/>



The screenshot shows the website interface for the Illinois Geographic Alliance. The header includes navigation links for Maps, News, Events, Employment, and Search/A-Z. The main navigation bar features links for Home, About, Membership, Partners, Atlas, Lesson Plans, Resources, and Contact Us. The 'Atlas' link is highlighted. The main content area is titled 'Online Atlas of Illinois for K-12 Classrooms' and includes a brief description of the atlas, a 'Printable Basemaps' section with a list of map options, and a 'Coming Soon' notice for teacher and student resources.

ILLINOIS GEOGRAPHIC ALLIANCE

Search Site...

Home About Membership Partners **Atlas** Lesson Plans Resources Contact Us

Online Atlas of Illinois for K-12 Classrooms

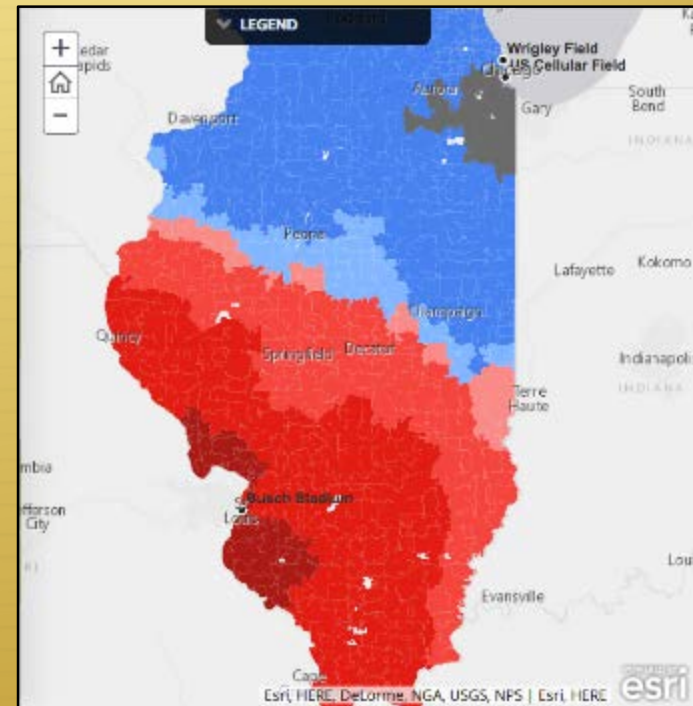
The Illinois Geographic Alliance and Illinois State University recently created a free online atlas tailored for AP Human Geography classrooms. This interactive mapping catalog will actively engage students in a modernized way.

Explore the maps

Printable Basemaps

- Counties Named
- Counties Unnamed
- Municipalities Named
- Municipalities Unnamed
- Rivers and Lakes

Coming Soon: accompanying teacher and student resources.

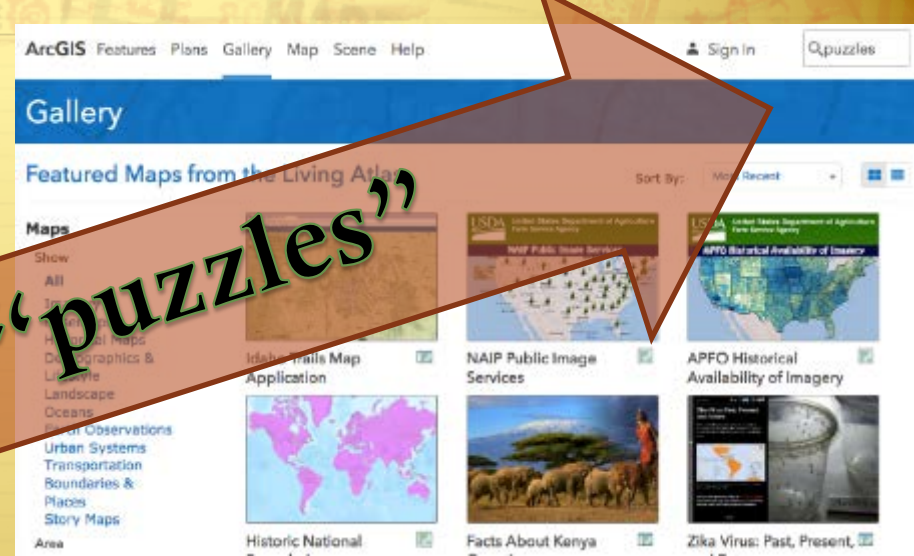


AP Human Geography Activity:

Map shows the concentration of MLB fans by Illinois zip code.
Note the radial trend of colors from the stadium locations.

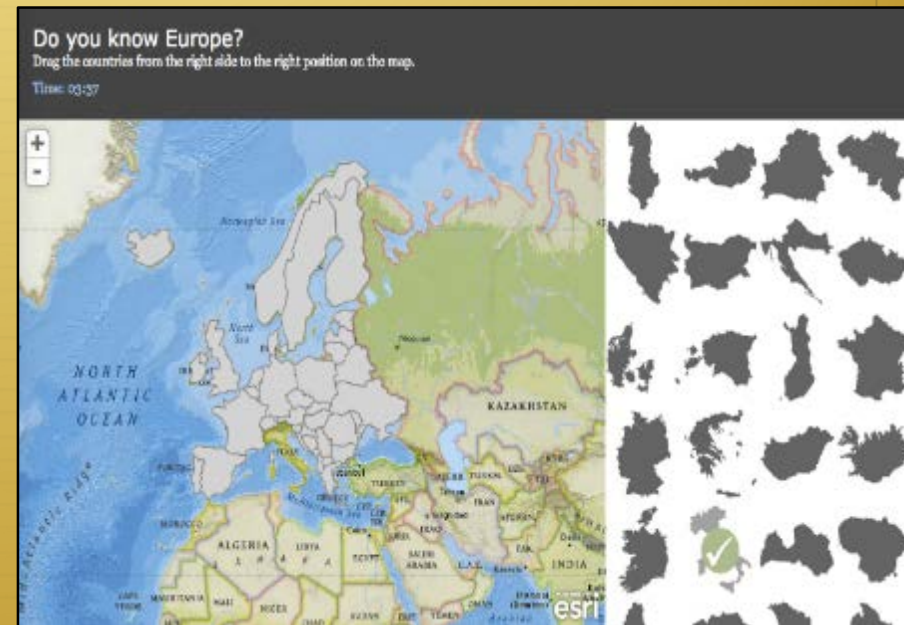
8 Map Galleries (ArcGIS Online)

Search for “puzzles”



Find the “Do you Know Europe?”
interactive puzzle map.

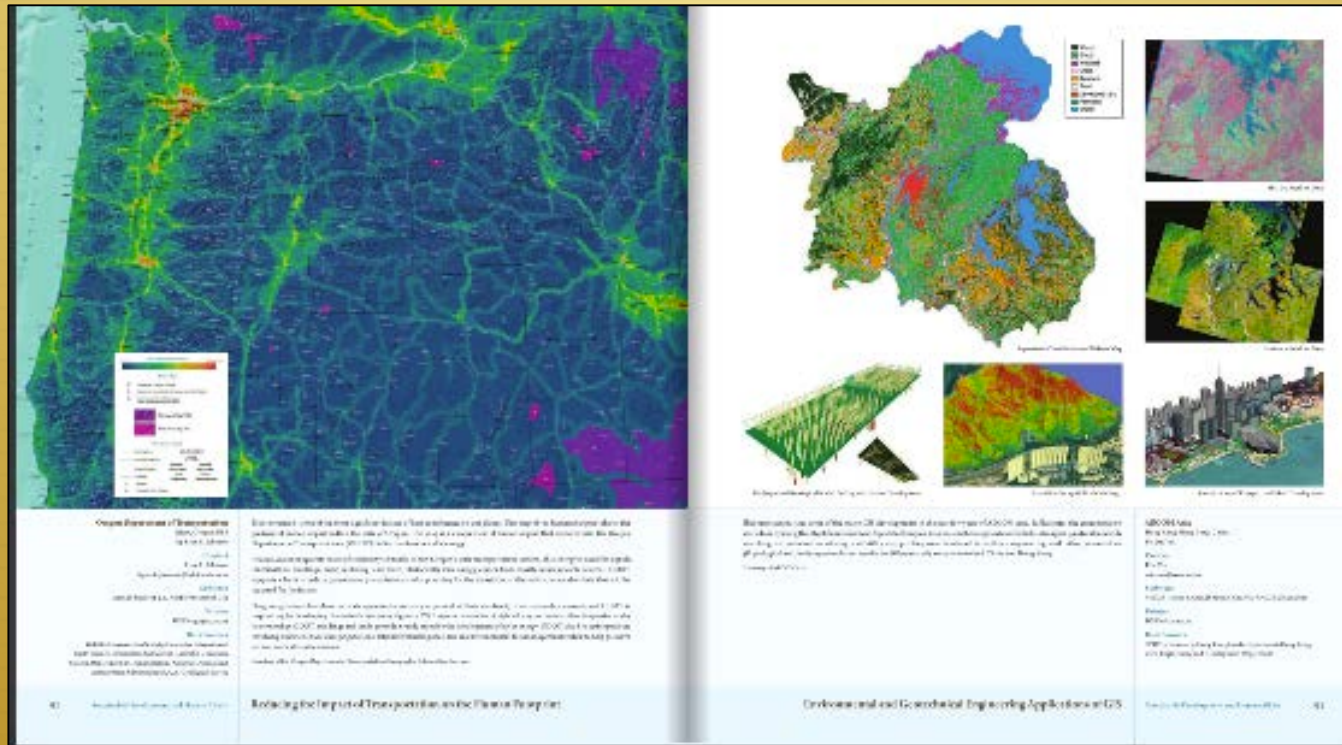
Drag a country on the right
to the correct position on the map.



Geography Activity: Interactive Game to learn European countries

Map Book Gallery

<http://www.esri.com/mapmuseum>



Sample Geography Activity: Learn the key cartographic elements of maps through beautiful examples.

10 Resource: USGS Earthquake Data

<http://www.esri.com/mapmuseum>

Download a CSV file and put it into an online map

The image displays two screenshots of online maps. The left screenshot is the USGS website showing a list of earthquakes and a world map. The right screenshot is an ArcGIS online map showing a legend for earthquake magnitude and a data table.

USGS Earthquake Data (Left Screenshot):

30 Days, Significant Worldwide
12 earthquakes.
Updated: 2016-11-08 20:34:48 (UTC)

Download Earthquakes

5.9	48km WNW of Talcahuano, Chile	2016-11-08 04:55:44 (UTC)	17.3 km
5.0	2km W of Cushing, Oklahoma	2016-11-07 01:44:24 (UTC)	5.0 km
6.4	25km ESE of Curico, Chile	2016-11-04 18:28:43 (UTC)	90.8 km
4.5	14km ESE of Pawnee, Oklahoma	2016-11-02 04:26:54 (UTC)	2.6 km
5.4	40km E of Colombia, Colombia		

ArcGIS Online Map (Right Screenshot):

Legend
significant_month
mag

- > 5.9
- 6.3
- 5.7
- 5
- < 4.5

time	latitude	longitude	depth	mag	magType
November 7, 2016	-36.58	-73.64	17.30	5.90	mw
November 6, 2016	35.98	-96.80	5.00	5.00	mw
November 4, 2016	-35.10	-71.00	90.79	6.40	map

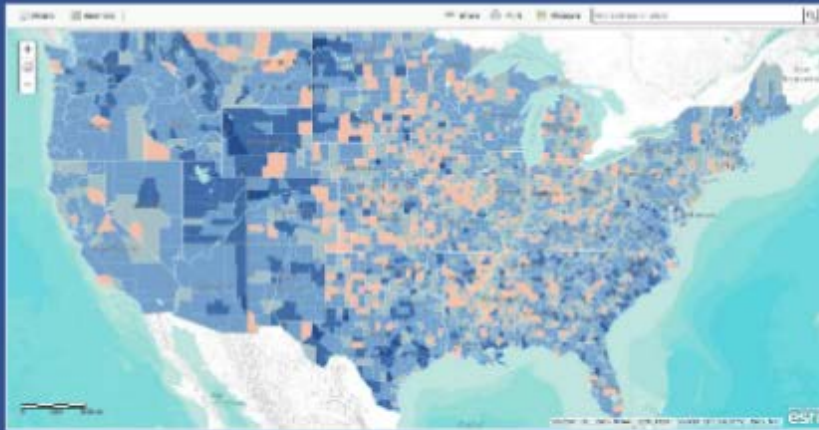
Sample Earth Science Activity on Plate Tectonics
Sample GIS Activity: Add a CSV file to an Online Map

75 Geoinquiry Activities

<http://edcommunity.esri.com/Resources/Collections/geoinquiries>

What are GeoInquiries?

ArcGIS Online Interactive Maps + Activity Sheets



USA demographics

Learning Objectives

- Students will be able to identify U.S. population density and compare spatial patterns.

Map URL: <http://bit.ly/1uYmF0j>

Ask

- Why do people cluster in certain regions, and why are there relatively fewer people in other areas?
- Which geographic factors are most likely to influence population density? Do you have any evidence to support this?
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Assess

What is the population density of your state?

- Classify the population density of your state into three categories: low, medium, and high.
- What are the major geographic factors that influence population density in your state?
- How do you think population density will change in the future? What factors will influence this change?

Explore

How does population density vary across the United States?

- Classify the population density of your state into three categories: low, medium, and high.
- What are the major geographic factors that influence population density in your state?
- How do you think population density will change in the future? What factors will influence this change?

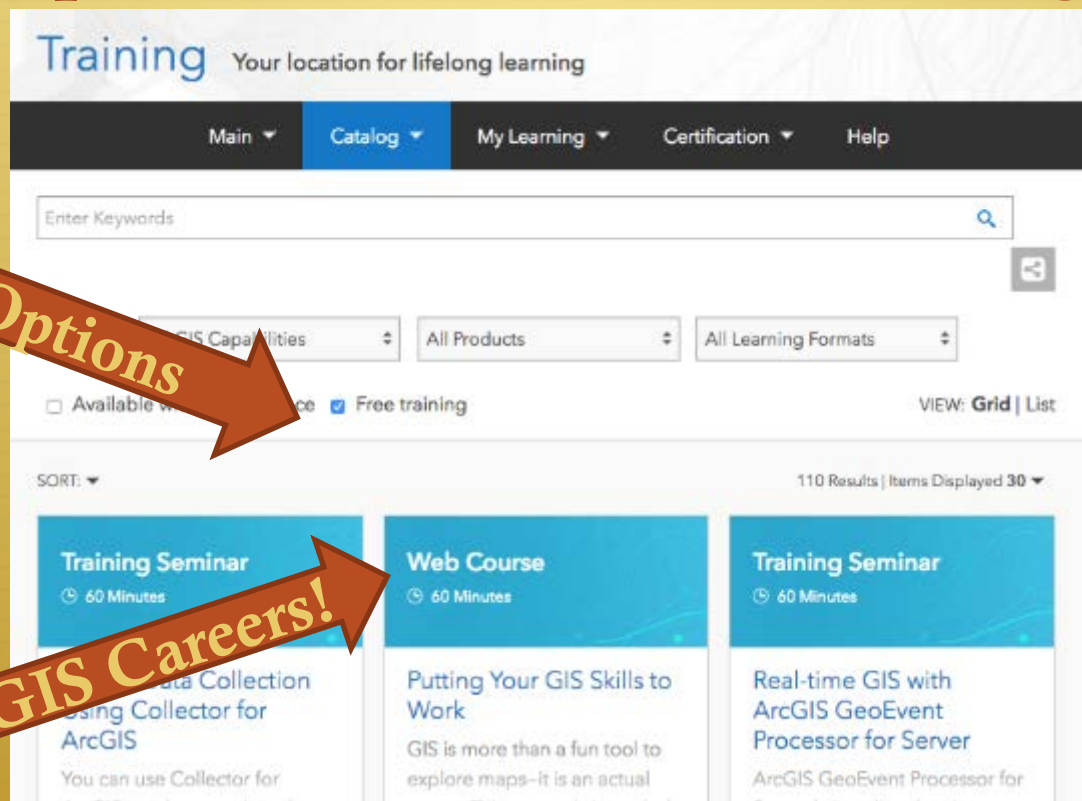
Social Studies/ Earth Science Lessons

Short 15 minute lessons using as little as a projector and a tablet

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Esri Training all in One Place

<https://www.esri.com/training/>



See Free Options

Learn about GIS Careers!

Many Formats including: MOOCs, E-Learning, Books and Teacher Resources

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Twitter

Facebook

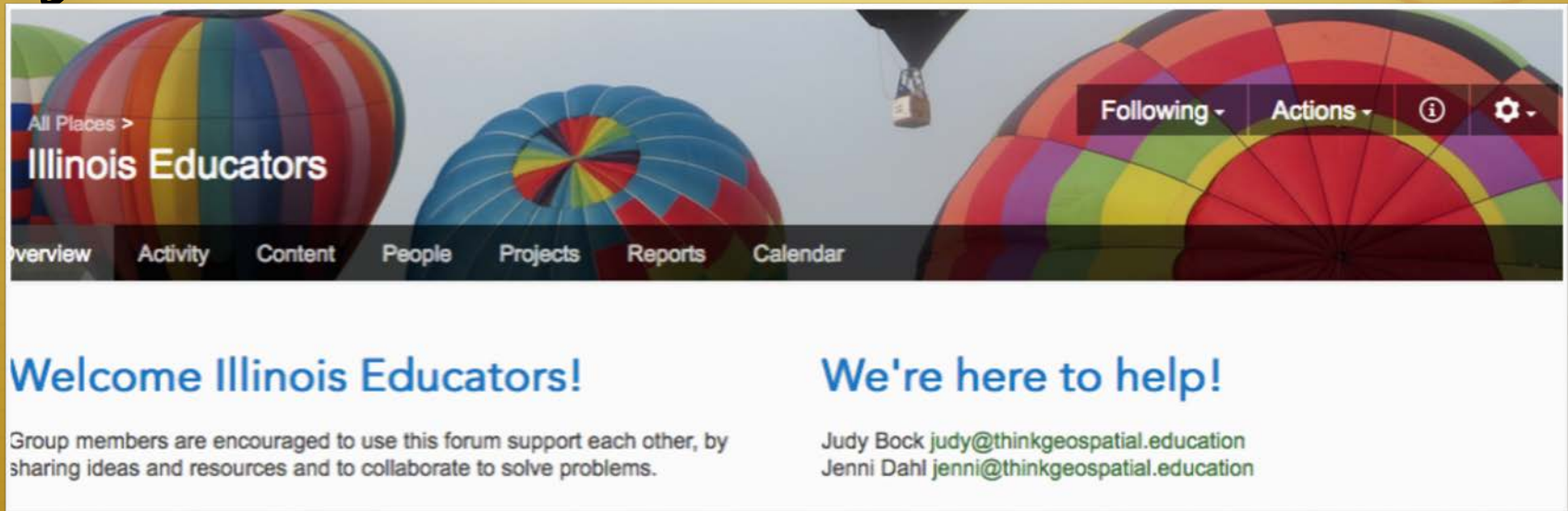
Google +

*Online Networking
Getting & sharing GIS info
has never been so easy!*

Please follow @think_geo on Twitter

NETWORKING

Sign in to GeoNet, the Esri Community



All Places >
Illinois Educators

Overview Activity Content People Projects Reports Calendar

Following - Actions - ⓘ ⚙ -

Welcome Illinois Educators!

Group members are encouraged to use this forum support each other, by sharing ideas and resources and to collaborate to solve problems.

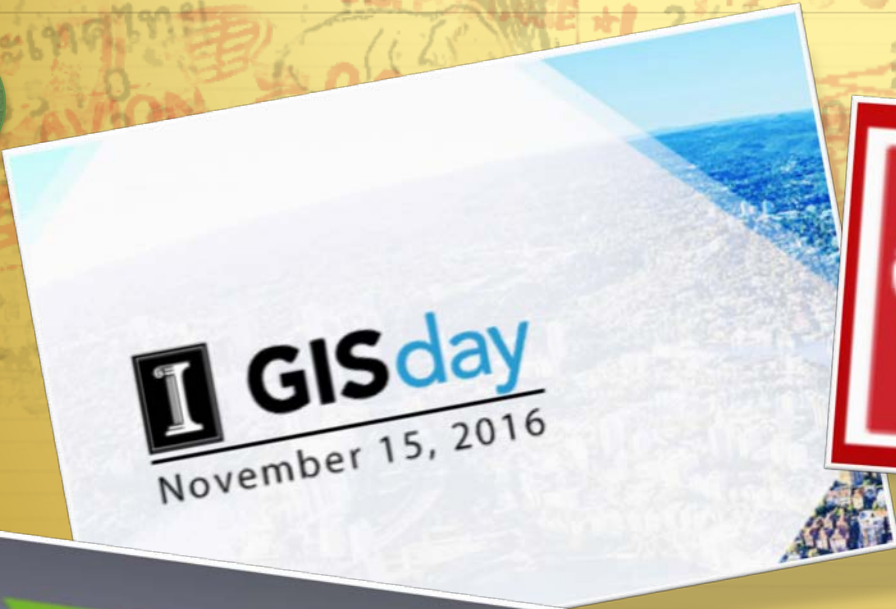
We're here to help!

Judy Bock judy@thinkgeospatial.education
Jenni Dahl jenni@thinkgeospatial.education

<https://geonet.esri.com>

Join the “Illinois Educator” Group to share ideas & resources and to collaborate to solve problems

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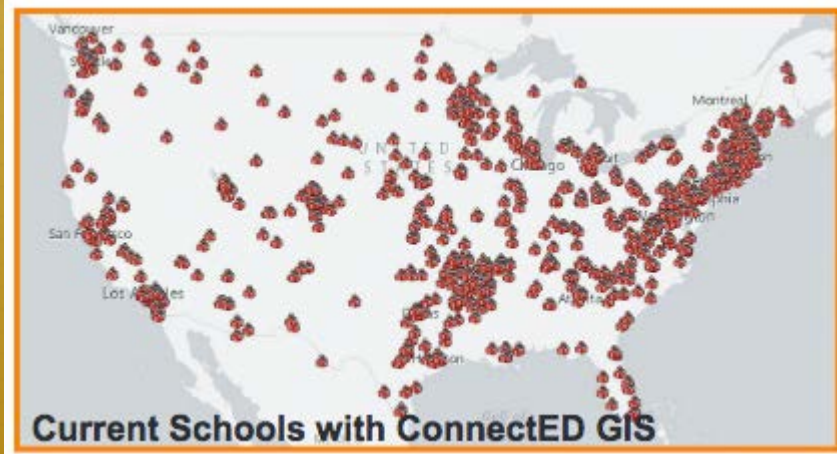
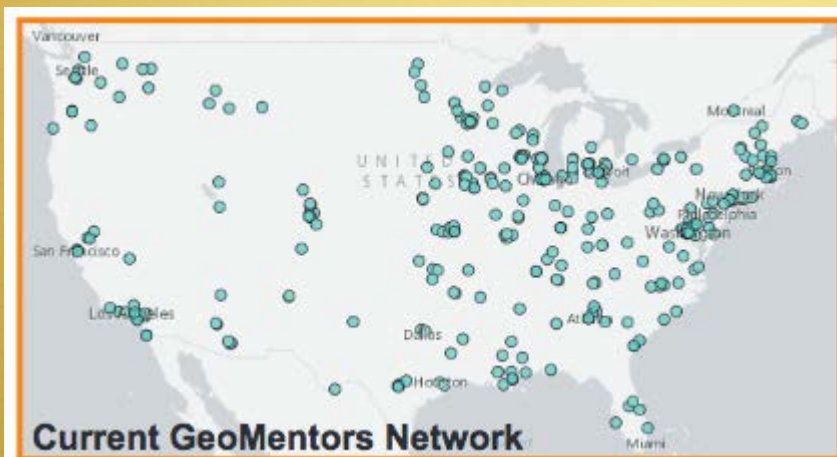


*Face-to-Face
networking + sharing
GIS Day, Conferences, &
join an organization!*

Go to a conference, attend a workshop
and join an organization!

Wanted GeoMentors!


<http://geomentors.net/>



Join the GeoMentor Community

If each GeoMentor connects with one educator or school to share geographic concepts and GIS resources, we can make a profound impact on K-12 education. A wide range of resources are available for GeoMentors to use. GeoMentors can also join several online communities to interact with fellow program participants and staff.

 @AAGGeoMentors

 <https://www.facebook.com/AAGGeoMentors>

To become a GeoMentor, sign up at:

www.GeoMentors.net

turn page for more information →



Lend your expertise to help a classroom

The tools are there for students to learn valuable geospatial & critical thinking skills for college, careers & to solve the world's problems. The challenge for teachers, informal educators and geomentors is to ensure that our youth are aware of these tools and know how to use them!

