Storytelling with Esri Story Maps

Exercise 1: Exploring Story Maps
Estimated time: 10 minutes

Exercise 2: Building a Story Map Tour
Estimated time: 10 minutes

Exercise 3: Creating a Story Map from an Existing Map
Estimated time: 15 minutes

Exercise 4: Creating an ArcGIS Online Presentation
Estimated time: 5 minutes

Exercise 5: Creating Multimedia Map Notes
Estimated time: 5 minutes

Exercise 6: Building a Map Tour Story Map
Estimated time: 15 minutes

Exercise 7: Building a Map Journal Story Map
Estimated time: 10 minutes

Exercise 8: Using the Configurable Story Maps Applications
Estimated time: 5 minutes

Total time: 75 minutes
**Exercise 1: Exploring Story Maps**

*Estimated time: 10 minutes*

Maps have been used to tell stories for thousands of years. Why? In large part, it is because maps have always been an efficient means of conveying a large amount of information in a small amount of space. Yet as rich as those maps scrawled in the dirt, or later etched on stone, carved in wood, and drawn on paper, linen, vellum, and film were, GIS allows for a greater amount and richer information to be conveyed in map form. GIS provides capabilities that allow the map reader and GIS user to derive additional information about the place, region, issues, and phenomena under study, using different scales, symbologies, analytical and statistical tools, multimedia, and publishing into a wide variety of formats. ArcGIS provides a platform for those maps to be created, modified, analyzed, embedded, searched, and shared.

In this exercise, you will explore different ways to tell stories with web-based GIS, and ArcGIS Online in particular, with a focus on the Esri Story Map capabilities and templates. Story maps are a specific family of web mapping applications possible within the ArcGIS Online platform.

In these exercises, you will:

- Explore ways to tell stories with ArcGIS Online, including maps and web mapping applications.
- Browse the Esri Story Map galleries.
- Reflect how to teach with Esri Story Maps.
- Learn the differences and similarities between ArcGIS Online maps, web mapping applications, and story maps.
- Create a map, and publish it as a Story Map Swipe Web Application.
- Add multimedia map notes, video, and a GPS track to your web maps.
- Publish a Map Tour and a Map Journal story map, and if time, a tabbed story map.
- Investigate how to use the Esri Story Maps configurable apps.

**Step 1: What are story maps, and how can they be used in education?**

Examine the slides that accompany this workshop and consider (1) how story maps can be used in education, (2) how **you** can use them, and (3) which type(s) of story maps you are most interested in.

**Step 2: Browse Esri Story Maps Gallery**

☐ Go to [http://storymaps.arcgis.com](http://storymaps.arcgis.com) and browse the Gallery. Esri Story Maps are built on the ArcGIS Online platform. They provide an easy and rich way to integrate photographs, video, text, and maps into an interactive story.
Step 3: Discuss 1 Map on the Story Maps Gallery

☐ Select one map you like or that you find useful, and discuss with your neighbor what you found interesting about it and how you might use it in teaching, learning, or research.

Question 1. Describe your chosen map and how you might use it:

(Answer: Answers will vary due to the many types of story maps that exist. One of Joseph's favorites is the Titanic story map because of its tie to a geodatabase, use of pie charts, and ties to his existing GIS based lesson on the Titanic).

Story maps provide a rich medium for instruction. You can use existing Story Maps, or you can create your own. You have already examined some Story Maps in the Gallery, but let's now examine a few that the author of this activity (Joseph Kerski) created.

In this exercise, you will:
- Examine maps that were created using the Esri Story Maps template.
- Discuss how you might teach and encourage student learning with these maps.

Step 4: Examine Selected Story Maps and Discuss How They Were Created

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BioBlitz 2015 Hawai’i Volcanoes:
http://story.maps.arcgis.com/apps/MapJournal/?appid=45867f2ae46e4587af8eb7e7b343b9b

Anchorage Urban Bears
http://www.adfg.alaska.gov/index.cfm%3Fadfg%3Dlivingwithbears.anchorageurbanbearsstorymap

Lakota Language Story Map:
http://denverro.maps.arcgis.com/apps/MapTour/?appid=60ac74d36ae34ce181e88fbee56831

Esri Young Scholars:
http://denverro.maps.arcgis.com/apps/MapTour/index.html?appid=a383612f79354488929beabcd266cd77

International Perspectives on Teaching and Learning with GIS in Secondary Schools:
http://denverro.maps.arcgis.com/apps/MapTour/?appid=5f86647b1e8e491aadae6345927f2a

Atlas for a Changing Planet:

You have begun to explore similarities and differences between Esri Story Maps and have discussed how they are made. Most of the templates that these Story Maps are created from are customizable, and you can create your own story maps from them. You are now ready to create your own Story Maps!

Exercise 2: Building a Story Map Tour

Estimated time: 10 minutes

In this exercise, you will create a story map tour.

Go to storymaps.arcgis.com > Apps > Create Story > Map Tour > Log in.

Your ArcGIS Online username and password for this workshop will be provided by your instructor. Please record them here:

Username______________________________
Password_______________________________
Exercise 3: Creating a Story Map from an Existing Map

Estimated time: 15 minutes

1. In this exercise, you will create a story map from an existing ArcGIS Online map. Open a median age and median income web map in ArcGIS Online:

   http://denverro.maps.arcgis.com/home/webmap/viewer.html?webmap=53f7c91aa02643c087e83a53edf87545

Make sure median income appears at the top of the table of contents and is turned on, and your median age is underneath, and turned on:
Telling Your Story with Esri Story Maps

Next: Save > Share > Create a web map, as shown below:

Next > Build a Story Map > Story Map Swipe and Spyglass:

> Title your map (include “swipe” in your title) and provide metadata. In the builder tools that appear next > Swipe Style Vertical Bar > Swipe Type: Select layer to swipe: 2014 Median Income > Take defaults on App layout > Pop-up: Left Map header title: Median Age 2014. Right Map header title: Median Income 2014 > Open the app, and check it. It should look similar to this, below:
Question 1: What are two differences between the ArcGIS Online web map and the Story Map web application? When might you want your data users to use the web map, and when might you want them to use a web mapping application?

(Answer: The ArcGIS Online web map contains the full interface AND the user can modify it. Story maps contain a customized interface and may not be modified by the end user. Both are useful depending on your educational goals.).

Question 2: What is the connection that exists between the web map and the web app?

(Answer: The web mapping app (story map) needs the underlying web map to function!).

**Exercise 4: Creating an ArcGIS Online Presentation**

*Estimated time: 5 minutes*

In this exercise, you will create a presentation as an illustration of how stories can be told with ArcGIS Online. Presentations are quick and easy ways to create a storytelling experience to communicate your map and contents. Here, you will create a 3-slide presentation about median home value.

- Go to My Content. Open your Median Age and Income map in the map viewer. In the upper right, select Create Presentation.

- Click on the + Add button to add a new slide #1. Title this slide “Exploring Median Age and Home Value: Scale Matters!” Set scale to current. Add another slide, Slide #2, and zoom so that you can see California by county”. Set scale to current. Zoom to California and Nevada until the data visible is by county. Add Slide #3, zoom to San Diego County, turn on Median Income, and title it “San Diego County Median Income.” Set scale to current. Click on a census tract and check “include open pop-up in presentation.”

- Select Save. Play your 3-slide slideshow and check to ensure that it communicates as you intended. It should look similar to this (slide 3 shown):

- Go to My Content. Note that your presentation is part of your map; it is not saved as a separate item. Now that you have created your presentation, you can in the future open your map OR open your presentation. There is one presentation allowed per map.

**Exercise 5: Creating Multimedia Map Notes**

*Estimated time: 5 minutes*
In this exercise, you will create map notes with pop-up boxes as an illustration of how stories can be told with multimedia and ArcGIS Online.

- Open your Median Age and Income map in the map viewer. Make the population density layer invisible and the Median Home Value layer visible. Using the search box, Find “-117.168484, 32.706307”. The result should locate you on the San Diego Bay shore. Select Add to Map Notes.

- Edit the Map Note. In the description, enter “View of San Diego Bay.” For Image URL, enter: http://www.josephkerski.com/wp-content/uploads/2012/07/sunset_sailboat21-1000x664.jpg. Map notes photographs need to be those that can stand alone on the web; i.e. be opened as a separate web page and not wrapped in an animation or frame.

- Select “Edit” to close your editing session. Test your popup. It should look similar to that shown at right.

- When adding images to map notes and story maps, you should get into the “best practice” of using either your own images, images held in Creative Commons licensing (such as most from Wikipedia), images from U.S. government agencies, or other non-copyrighted images, and not content from a commercial site such as “Bob’s Photography Inc.com.”

- Question 1: What are the benefits and challenges of Map Notes?

   Answer: Benefits – easy to create and modify; but time consuming to create en masse; you can do some spatial analysis based on them but they are not feature services so they have limited functionality.

Excellent! In this exercise, you learned how to create a pop-up box with multimedia. Multimedia through map notes is another way to tell stories with maps.

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**Exercise 6: Building a Map Journal Story Map**

**Estimated time: 15 minutes**

In this exercise, you will:

- Now that you have created a swipe map and a map tour map, let’s build what is probably the most powerful and flexible type of storymap – the Map Journal.
Step 1: Create your Map Journal story map.

- Go to [http://storymaps.arcgis.com](http://storymaps.arcgis.com) > Apps > Story Map Journal > Build > Layout > Side Panel > Start. Title: Feeding the Planet, by <your name>.

- Configure content: Image > Flickr > User Name = mapjournal. > Load Albums > Select album Workshop (10) and choose a photo that you like.

- Add >> Add section >> Select Map >> Search for StoryMapWorkshop: on ArcGIS Online > Click thumbnail > Next to content, click Custom Configuration > Click Boxes next to layers: Current Crop Yields Notes, Current Crop Yields, and Elevation Hillshade.

- Save Map Content > Next > Add Text > Camera Icon to add photo from Flickr or elsewhere.

Step 2: Customize your Map Journal story map.

- If time permits: Add more sections, place multimedia or websites on the Main Page, Add photos or videos to the Side Panel, Use Main Stage Actions to do additional things within a Section, Use Settings function to customize.

Question 1. Summarize the steps in creating a Map Journal:

(Answer: Before you build a Map Journal, if you are pointing to your own other story maps, build those first and make sure they work. Then, use Builder mode to build Map Journal, add sections, one at a time; add content to sections (video, maps, images, other). Save, share, and publicize).

Exercise 7: Building a Side Accordion Story Map

Estimated time: 10 minutes

Now that you have created several Story Maps, let’s build a side accordion story map.

In this exercise, you will:

- Build a side accordion story map **including at least 3 tabs** and discuss the differences between the side accordion story map app and other types of story maps.

2. Select Create Story > Series > Side Accordion > Start.
3. Enter a title: **Boots of Wimberley Texas**
Exercise 8: Using the Configurable Story Map Applications

Estimated time: 5 minutes

Now that you have created several Story Map web apps, let’s discuss how to make a fully-customizable Story Map using the configurable Story Map applications.

In this exercise, you will:

- Discuss the differences between publishing a web application Story Map vs. working with the configurable Story Maps applications.
- Examine the steps involved in downloading, modifying, and uploading a Story Maps application.

Step 1: Discuss differences between publishing a web application Story Map vs. Working with the configurable Story Maps apps.

- Recall that several ways exist to publish a map as a Story Map. You have already created a Map Tour, a Swipe map, a Map Journal, and a Tabbed story map. Using the configurable Story Maps applications provides additional power and flexibility. For example, compare the maps you created in this workshop with the following map: http://www.josephkerski.com/storymaps/brugge_shortlist/. This is a map the author of this workshop made with one of these configurable apps, in particular, the “shortlist” app. This and other configurable apps provide more functionality than publishing to the web application directly from ArcGIS Online. They also allow you to publish the results to your own website.

- From http://storymaps.arcgis.com, go to the “APPS” link. You should now be at the following page: http://storymaps.arcgis.com/en/app-list/ Investigate any of the app types. Notice at the bottom of each is a developer zone:

- To use the downloadable apps, you do not necessarily need to know how to code in JavaScript to place the story maps on your own site, but you do need to understand a bit how HTML works. In addition, you do need access to a web server to host your Story Map. In other words, if you use these, your story maps will reside on your own server, rather than on Esri’s servers. You can use Weebly or Google sites, or your school’s or university’s server, or other web hosting environments to build websites that host your storymaps. To take full advantage of customizing the apps for your own needs, then, you...
do need to be familiar with JavaScript.

**Step 2: Demonstrate how to publish a map as a Story Map Web Application**

- First, think about your story, your audience, your goals, and the web experience you want your audience to have. Then think about the cartography, scale, symbology, images, and interface you want for your Story Map. Examine this document about how to tell stories with your Story Map: http://storymaps.esri.com/downloads/Telling%20Stories%20with%20Maps.pdf


- This playlist of five videos that the author (Joseph Kerski) created on Story Maps might be useful: http://www.youtube.com/playlist?list=PLiC1i3ejK5vsOn6cQS_m4dk5YAtoEBFq0

  Alternatively, go to http://www.youtube.com/geographyuberalles → Playlists → Esri Story Maps for Education II.

- Creating a Story Map on your own site involves the following steps:

  1. Download the Story Map app that corresponds to the user interface that you need.

  2. Unzip the zip file to a location on your computer. You will now have folders such as images, libs, and skins, and an index.html and other files. You will have dozens or even hundreds of files, but only a few of them need to be altered for your own Story Map. But they are all needed and must be uploaded to your server. That is the beauty of these apps: You are modifying work that someone else has done rather than creating the whole thing from scratch.

  3. Before editing anything, it is best to make a copy of everything in a separate folder, in case you inadvertently alter something you did not mean to alter (!).

  4. Depending on the type of story map you have chosen, you will refer to the tutorial corresponding to your desired story map app type. No matter what type of app you have chosen, you will do some light editing of the index.html file. This file is the main document that controls the look and behavior of a web page, including story maps, which reside on the web. You will be changing the title of the web page in the HTML, the byline, the URLs for where your photographs reside (Picasaweb/Google Plus, Flickr, etc., as long as they are publicly accessible), the basemap, map center and zoom, and a few other items, depending on the template you are using.

  5. Tips on photographs:

     - Make them small so they will be easy for your browser to draw. Ideally, resize all images to be the same size for a more professional look and feel.
     - Ideally, move them to your own web server so that you won’t encounter any broken links. Make sure you cite your photograph sources.
     - Use either your OWN images, those held in Creative Commons licensing, or images from U.S. government agencies or other non-copyrighted images, rather than content from a commercial site. If you are using a source that is copyrighted, or you are not sure if it is, be sure to ask permission from its owner.
Create an ArcGIS Online map containing your content. This content could be from an uploaded CSV with street address or latitude-longitude coordinate pairs, from map notes, from an uploaded shapefile, or from other sources. As you know, Story Maps are based upon your ArcGIS Online map, so that when you change your ArcGIS Online map, your Story Map automatically updates. Save and share your ArcGIS Online map.

Point to your ArcGIS Online map in your story map documents. Upload your edited story map documents to your own server. Test your story map with a variety of browsers, operating systems, and devices.

Question 1. Summarize the major steps in using the Story Maps configurable apps to publish a Story Map:

(Answer: Download set of files to your computer. Modify index HTML and selected other files. Upload these files to your own server. Link to the web map. Test and publicize.).

Story Maps Quiz Time!

1. Story map journals can only access 1 map: True or False?

2. Once you create a story map, you can delete the ArcGIS Online map behind it: True or False?

(Answers: 1=False. Map Journals can access multiple maps. 2=False. You must not delete the map behind your story maps, or your story maps will not work. Your story maps are applications that point to the map).

Continuing Your Learning

Keep on moving forward with your story maps journey! Selected resources:

Story maps blog: https://blogs.esri.com/esri/arcgis/category/story-maps/

Education Blog: https://geonet.esri.com/community/education/blog

Q&A and links to selected resources: https://blogs.esri.com/esri/arcgis/2017/01/31/things-you-can-do-story-maps/

Sign up for Story Maps newsletter: http://go.esri.com/planet-story-maps

Telling Your Story with Esri Story Maps

ArcGIS App Strategies

Get Started with Web AppBuilder for ArcGIS

Web Course: Creating and Sharing GIS Content Using ArcGIS Online

MOOC on Do-It-Yourself Geo-Apps: http://www.esri.com/mooc

Conclusion

Here, you have examined how to use the Story Maps configurable apps. I encourage you to publish a Story Map soon using this method and to share your maps with the GIS education community.