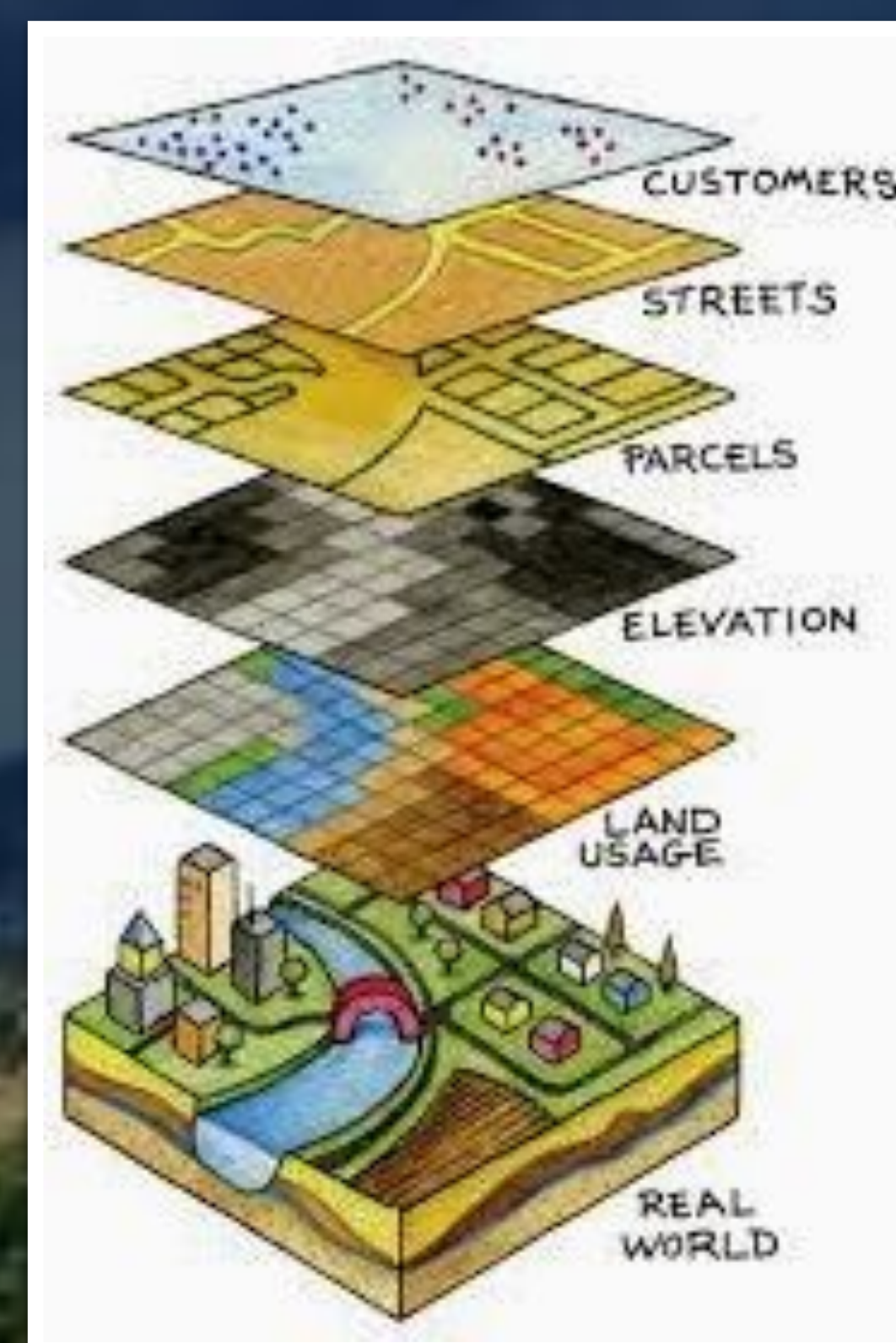


## What is GIS?



**GIS** stands for **Geographic Information System**. It is used to analyze a database and receive the results in the form of a map. Since many kinds of data have important geographic aspects, GIS can have many uses such as: weather forecasting, sales analysis, population forecasting, and land use planning, etc. A working GIS integrates five key components: hardware, software, data, people, and methods.



## Creating a Story Map



- Choose a Story Map design using Arc GIS Online



- Begin to input data using Collector
- Upload images of location
- Insert a description
- Use Settings to change colors on your story map layout
- Use Extent to zoom in on a particular area you want to focus on

## Teaching Implementation: Comparing the Earthquakes in Western New York with Earthquakes throughout the World



## Learning Standards Addressed:

### ESS3.B: Natural Hazards

Natural hazards and other geologic events have shaped the course of human history; [they] have significantly altered the sizes of human populations and have driven human migrations. (HS-ESS3-1)

### ESS3.C: Human Impacts on Earth Systems

The sustainability of human societies and the biodiversity that supports them requires responsible management of natural resources. (HS-ESS3-3)

Scientists and engineers can make major contributions by developing technologies that produce less pollution and waste and that preclude ecosystem degradation. (HS-ESS3-4)

### CCSS.ELA-LITERACY.RST.9-10.7

Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.

### CCSS.ELA-LITERACY.RST.9-10.8

Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.

### CCSS.MATH.CONTENT.5.MD.B.2

Make a line plot to display a data set of measurements in fractions of a unit ( $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{8}$ ). Use operations on fractions for this grade to solve problems involving information presented in line plots.

In the Regents Earth Science curriculum, there are several topics that this lesson addresses: Coordinate mapping, Natural hazards, Topography & Plate movement.

The students will:

- Research Earthquake occurrences throughout the world documenting in chart format details of location, activity, magnitude, documented devastation, etc
- Focus on a certain of the world, using their documented data and begin to create a story map
- They will then add to their story map a comparison of the earthquake activity seen here in Western New York

## References

- ESRI Arc GIS <https://www.arcgis.com/home/index.html>
- National Ocean Service, National Oceanic and Atmospheric Administration, US Department of Commerce <https://oceanservice.noaa.gov/facts/gis.html>
- Earthquake Tracker in the United States <https://earthquake.usgs.gov/earthquakes/recent>
- United States Geological Survey USGS <https://earthquake.usgs.gov/earthquakes/map/>

## Acknowledgements

I would like to thank NSF for the opportunity to take part in the ISEP Partnership with the University at Buffalo. We would also like to thank Dr. Joseph Gardella Jr for his supportive efforts throughout the program and in our buildings. And a special thank you to the GIS Camp instructors that shared their knowledge with us so we can bring more to our students

## What is a Story Map?

A story map is a type of application that is stored in the ArcGIS Online cloud, and has a specific set of tabs, text, photographs, video, and audio capabilities presented to the map user. There are many benefits to using story maps in your classroom. They provide:

- Story maps provide good ways to teach content.
- Story maps provide good ways to teach GIS, data, computer, multimedia, and other technical skills.
- Story maps provide good ways to teach critical thinking, organizational skills, and other skills.
- Story maps provide good ways to assess student work.

