

# Arizona

## Alliance Created State Giant Traveling Map Lesson

### **Title: Longitude and Latitude: Harmony of the Spheros**

*Note: Spheros are robotic balls that can be programmed to move across the giant floor map. You will need to have access to these robotic balls before attempting this lesson. A video of what this lesson will entail can be found at: Longitude and Latitude: Harmony of Spheros video demonstration. [https://youtu.be/AVY\\_24-HZ1Q](https://youtu.be/AVY_24-HZ1Q)*

**Recommended Grades:** High School

**Spatial Concept:** Locating latitude and longitude with wayfaring devices

**Time Needed:** 50 minutes

### **Objectives:**

Students will use geospatial technology on the Giant Map to locate map coordinates and learn more about Arizona.

Students will:

- Locate latitude and longitude coordinates on the giant floor map using Spheros (wayfaring devices).
- Participate in a competitive game.
- Locate latitude and longitude coordinates on a paper map.
- Research an Arizona county for fun facts.
- Write a mini essay in the form of a student blog.

### **Materials:**

- Arizona Giant Floor Map
- Arizona Counties map  
<https://geoalliance.asu.edu/sites/default/files/maps/azcounties-names.pdf>
- Latitude and Longitude Coordinates
- 4 Spheros (robotic balls)
- 4 handheld devices (phones, ipads, etc.) with Spheros apps
- 4 orange cones to cover the Spheros as they travel
- Markers (red, blue, green, and yellow)

### **Preparation:**

- Have the Spheros app downloaded on the 4 handheld devices.
- Print, cut, and laminate Latitude and Longitude Coordinates for Arizona counties.
- Print one copy for each basecamp of the Latitude and Longitude Coordinates

# Arizona

## Alliance Created State Giant Traveling Map Lesson

- (Optional) Play classical instrumental music for duration of map component.
- Provide access to Graphic Organizer Blog maker.

### Rules:

- Shoes are not allowed on the map. Please have students remove shoes before walking on the map. Students must wear socks. No bare feet.
- No writing utensils on the map. Keep all writing utensils and other sharp objects 12 inches from the edge of the map.
- Spheros must be used with orange cones.

### Directions:

*Prior to this activity, review how the Arizona Giant Floor map has latitude and longitude on the edges of the map. Make sure students understand that latitude is always found first and then longitude. Model finding some locations for them. Perhaps have each base camp also practice finding locations before using the Spheros. Optional: Play classical music while students are doing the activities if you feel this will calm them down.*

1. Divide students into 4 groups (one for each base camp).
2. Assign each base camp a Sphero corresponding to their base camp color [red, blue, green and yellow] and have students move to their base camps.
3. Distribute an orange cone to each base camp and a paper copy of Latitude and Longitude Coordinates.
4. Tell groups to place their Sphero on the map with the orange cone on top.
5. Tell groups that when a new set of latitude and longitude coordinates are read by the teacher, the group will harmoniously glide the Sphero to that location. The first base camp to arrive at the specified absolute location, wins the grid card.
6. The winning base camp may then mark/dot the paper copy of Latitude and Longitude Coordinates with their base camp color.
7. Continue reading out new sets of latitude and longitude coordinates until they are all claimed by winning base camps.
8. Leave the floor map and have students return to classroom or nearby location off of the map.
9. Distribute the Arizona Counties map with latitude and longitude coordinates.
10. Instruct base camps to work together to locate their “won” cards on the paper map. They should color in the counties that they “captured” with their marker.
11. Each member of the base camp selects one of the counties that was “captured” to research. If there are more students in the base camp than counties “captured,” have the students just select another county. Each member should have a county and not everyone in the group should be doing the same county.
12. Allow time for base camps to collect at least 5 County Fun Facts.
13. Each student now produces a mini essay in the form of a student blog from the 5 Fun Facts collected.

# Arizona

## Alliance Created State Giant Traveling Map Lesson

### **Standards:**

#### **Arizona Social Science Standards**

#### **Geography**

**The use of geographic representations and tools help individuals understand their world.**

HS.G1.1 Use geographic data to explain and analyze relationships between locations of place and regions. Key tools and representations such as maps, remotely sensed and other images, tables, and graphs

HS.G1.2 Use geospatial tools and related technologies to construct relevant geographic data to explain spatial patterns and relationships. Key tools and representations such as Google Earth, story mapping, wayfaring apps, and other geospatial technologies

#### **National Geography Standard**

**Element 1: The World in Spatial Terms** 1. How to use maps and other geographic representations, geospatial technologies, and spatial thinking to understand and communicate information

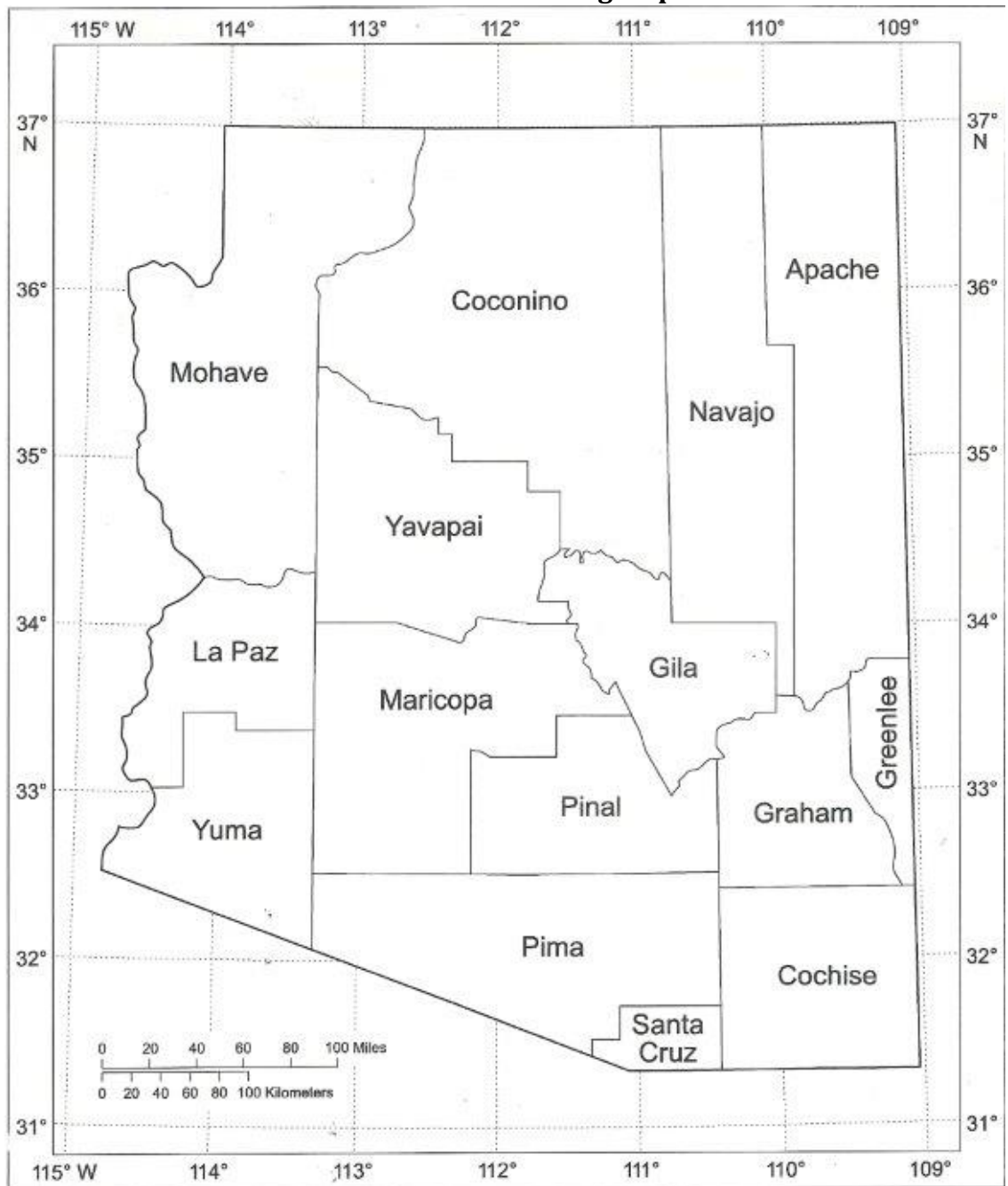
### **Links:**

Longitude and Latitude: Harmony of Spheros video demonstration.

[https://youtu.be/AVY\\_24-HZ1Q](https://youtu.be/AVY_24-HZ1Q)

# Arizona

## Alliance Created State Giant Traveling Map Lesson



## Arizona Counties



Courtesy: Arizona Geographic Alliance <http://geoalliance.asu.edu/azga>  
School of Geographical Sciences and Urban Planning  
Arizona State University  
Cartographer: Barbara Tranter, J. J. ...  
azga/alliance\_names.PDF

