NASCAR, Want to Race? Using NASCAR to Teach Geography.

Students will integrate geography and math through the study of sports geography. The student will use the Nextel Cup (the major leagues of racing) to illustrate statistical analysis using latitude and longitude, and illustrate how auto racing has gone national.

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Adapted from a lesson by Derek Alderman, East Carolina University

**Grade Level**
6-8

**Duration**
1-2 class periods

<table>
<thead>
<tr>
<th>National Geography Standards</th>
<th>Arizona Geography Strand 4</th>
<th>Arizona Math Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ELEMENT ONE: THE WORLD IN SPATIAL TERMS</strong></td>
<td><strong>CONCEPT 1 World in Spatial Terms</strong></td>
<td><strong>STRAND 2; Data Analysis, Probability and Discrete Mathematics</strong></td>
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<tr>
<td>1. How to use maps and other geographic representations tools, and technologies to acquire, process, and report information from a spatial perspective</td>
<td>1. Construct maps, charts and graphs to display geographic information.</td>
<td><strong>CONCEPT 1 Data Analysis</strong></td>
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<tr>
<td>3. How to analyze the spatial organization of people, places, and environments on Earth’s surface</td>
<td>2. Interpret maps, charts, and geographic databases using geographic information.</td>
<td><strong>GRADE 6</strong></td>
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<td><strong>Purpose</strong></td>
<td><strong>GRADE 7</strong></td>
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<td>In this lesson students will calculate a mean center that gives the average location of tracks hosting Nextel Cup, formerly Winston Cup races. They will compare the distribution of tracks in 1970 and 2004. The student will then</td>
<td><strong>GRADE 8</strong></td>
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**Overview**
By integrating math and geography, students can examine how NASCAR racing has truly evolved from a regional sport to a national sport through an analysis of track locations, past and present, and illustrate important mathematical and geographic skills.
NASCAR, Want to Race?

plot the mean center from 1970 and 2004 and analyse why the change occurred.

Materials
- Student Worksheet
- A Short History of Grand National/Nextel Cup Races
- Table One: Track Locations of the Grand National Races, 1970
- Table One: Track Locations of the Grand National Races, 1970 Answer Key
- Table Two: Track Locations of Nextel Cup Races
- Table Two: Track Locations of Nextel Cup Races Answer Key
- Test
- Calculators
- U. S. Map on which to plot mean
- U.S. Map of changes in locations of races

Objectives
Students will be able to:
1. Find the mean center of average locations of racetracks in the United States used by the Nextel Cup through averaging the latitude and longitude coordinates of a series of cities.
2. Compare the changes in tracks and describe the effects of the changes.

Procedures
1. Discuss racing and racetracks. Use “A Short History of Grand National/Nextel Cup Races” if necessary.
2. Using Table One, listing the locations of the tracks that hosted the Grand Nationals in 1970, have the student add the total coordinates for the latitude column and the longitude column. The result will be the average location of the distribution of the racetracks.
3. Take the totals from each column and divide the number by 30, which is the number of cities that hosted the race in 1970. The resulting number is the average location of the distribution of racetracks.
4. Convert the decimal degrees to the traditional format.
   A. The whole number remains the same (i.e. 100.25 degrees longitude will be 100 degrees).
   B. Multiply the decimal by 60 (i.e. .25 \times 60 = 15).
   C. Place the number in the mean center box on the worksheet.
5. Repeat the same steps for Table Two, which represents the Nextel Cup Series locations.
6. Plot and label the mean center on your map.
7. Answer the questions on the student worksheet
8. If time allows have the students plot the points of the 1970 locations and the 2004 locations.

Assessment
Students should complete the student worksheets with an 80% degree of accuracy. The two-question test can be given as a formative or summative assessment. Mastery is considered 100%.

Extensions
Locate the hometowns of drivers and do the same calculations to determine where the mean center would be.

Sources
Alderson, Derek, Professor of Geography, East Carolina University, gave permission for this lesson to be used by the Arizona Geographic Alliance.