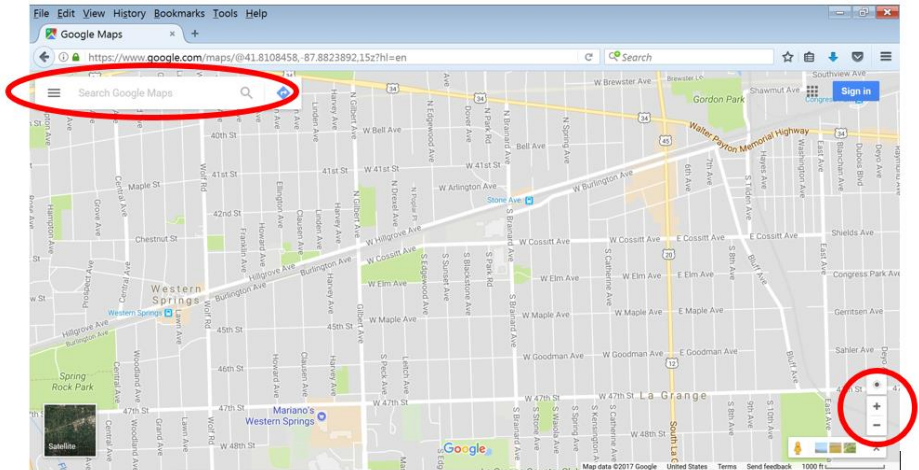


Name: \_\_\_\_\_

## Mapping the Lion Populations in Africa

Now that you have found your lion population, we need to find where you are geographically located. Each population has a set of GPS coordinates for the location of the pride. Using Google Maps, type in the coordinates provided for your population into the search bar. You will need to **zoom out** in order to find the country in which each population is located. (See below) Once you locate your population, you will plot it on the attached map of Africa.

On the map of Africa below, locate and mark the country where your pride is located. Then, on the map at the front of the room, indicate where your population lives using the colored post-it's at your table. Once each population has been located using the GPS coordinates, you will need to copy the location of all 10 on the attached map.



### GPS Coordinate Data

- Cameroon –  
7.3697 N, 12.3547 E
- Tsavo –  
2.1833 S, 38.4167 E
- Fannie Roberts –  
26.5225° S, 31.4659° E
- Sabi Sands –  
24.788 S, 31.4914 E
- Umfolozi –  
28.3430 S, 31.9743 E
- Zimbabwe –  
19.0154 S, 29.1549 E
- Zambia –  
13.1339 S, 27.8493 E
- Kalahari –  
25.5920 S, 21.0937 E
- Botswana –  
22.3285 S, 24.6849 E
- Etosha –  
18.8556 S, 16.3293 E



## Analyzing Microsatellite Data

You were initially given a “bar” that represented a set of alleles carried by a lion within a population. We now know that lion populations share many family members and, therefore, more similar alleles. But how do the alleles of different populations compare to one another?

1. Write two (2) populations that have very similar alleles. \_\_\_\_\_  
Why did you choose these two populations?

2. How do the two populations you chose above compare to one another geographically?

3. Based on geography, give one population you would expect to be very genetically different than many of the other populations. Why did you choose this population?

4. With which other population does the Fannie Roberts population seem to share many of its alleles?

Why is that finding unusual based on your understanding of the lion geography?

5. In Zambia, which 4 lions are likely to have migrated from a different population? \_\_\_\_\_

From which population do you believe they may have originated? \_\_\_\_\_

How does the geography of these two populations support or refute that finding?

6. Using evidence from your map, explain why the alleles in the Cameroon population are different from all the other lion populations.

7. The Etosha population is located in a National Park. Explain why the lions in this population may be genetically similar. (Consider how a population in a park is different than a wild population.)

8. In your own words, explain how geography influences genetics.

<b>The Driving Question</b>	
<b>Your Evidence from data (Microsatellite data)</b>	<b>Science ideas or concepts</b>
<b>Your Claim (<i>Your claim should answer the driving question.</i>)</b>	
The Sabi Sands lion population is composed of lions that were relocated from another part of Africa.	
<b>Your Reasoning (<i>How do your evidence and the science ideas support your claim?</i>)</b>	
Explain how your evidence supports the claim made about the Sabi Sands lion population.	