# Teacher Learning Goal
Students will be able to explain the methods of measuring absolute location of the planet using latitude and longitude. Students will examine the concepts of Latitude and Longitude and then practice finding different landmarks in Africa using coordinates.

## Student Pre-assessment
1. Answer the following series of questions dealing with the ideas of Longitude, Latitude, and Africa.
   a. What are lines of Longitude?
   b. What are lines of Latitude?
   c. What are some key physical and human characteristics of Africa?

## Student Learning Resources
- ArcGIS Earth – Downloaded from [http://www.esri.com/software/arcgis-earth](http://www.esri.com/software/arcgis-earth)
- Google Earth – Downloaded From [https://www.google.com/earth/](https://www.google.com/earth/)
- The Coordinates of Africa – Powerpoint with directions and locations (For class competition)
- Learning Latitude and Longitude with Africa – Handout for individual and student-paced variation
- Latitude and Longitude – Powerpoint with basics of Latitude and Longitude (If Needed)

## Student Post-assessment
Have students compare the continent of Africa to other landforms and answer the following series of questions.

1. Approximately how large is the continent of Africa from North to South? (Use your answer from round 2 – question 10, and round 2- question 9 to help you) *Note: These are not the extreme North and South points of Africa, but will allow a general idea.*
2. Compare the size of Africa to the North and South size of Greenland and South America. On the map which one looks the biggest? Compare the actual size using their Northern and Southern extents of Latitude, what is the difference between them?
3. Explain something you learned about the physical or human characteristics of Africa.

## Teacher Reflective Statement
Learning Latitude and Longitude with Africa

Directions: In this competition you are racing against the other members of the class to try and complete the questions as quick as possible. Use Google Earth or ArcGIS Earth to find the information and familiarize yourself with the software.

**Round 1:** Find a Famous Landmark – Find which landmark is located at each of the following set of coordinates

1 – 29°58′44.03″ North 31°08′03.08″ East
   **Answer:**

2 – 13°54′18.61″ South 4°33′18.90″ West
   **Answer:**

3 - 33°48′28.13″ South 18°22′16.28″ East
   **Answer:**

4 - 3°06′39.80″ South 37°22′46.64″ East
   **Answer:**

5 - 9°00′00.00″ North 30°44′38.64″ East
   **Answer:**

**Round 2:** Find the Coordinates – For each of the following landmarks write down the set of coordinates

6 – Victoria Falls, Zimbabwe
   **Answer:**

7 – Eko Atlantic, Lagos, Nigeria
   **Answer:**

8 – Sossusvlei, Namibia
   **Answer:**

9 – Nile River Delta, Egypt
   **Answer:**

10 – Cape of Good Hope, Cape Town, South Africa
    **Answer:**

**Bonus:** What feature is right on the western most point of the continent of Africa? (Not Including Islands)

   **Answer:**
Learning Latitude and Longitude with Africa

Directions: In this competition you are racing against the other members of the class to try and complete the questions as quick as possible. Use Google Earth or ArcGIS Earth to find the information and familiarize yourself with the software.

**Round 1:** Find a Famous Landmark – Find which landmark is located at each of the following set of coordinates

1. 29°58'44.03" North 31°08'03.08" East
   **Answer:** Great Pyramid at Giza, Egypt

2. 13°54'18.61" South 4°33'18.90" West
   **Answer:** Great Mosque, Djenne, Mali

3. 33°48'28.13" South 18°22'16.28" East
   **Answer:** Robben Island, Cape Town, South Africa

4. 3°06'39.80" South 37°22'46.64" East
   **Answer:** Mount Kilimanjaro, Tanzania

5. 9°00'00.00" North 30°44'38.64" East
   **Answer:** African Union Headquarters, Addis Ababa, Ethiopia

**Round 2:** Find the Coordinates – For each of the following landmarks write down the set of coordinates

6. Victoria Falls, Zimbabwe
   **Answer:** 17°55’27.95” South 25°51’16.59” East

7. Eko Atlantic, Lagos, Nigeria
   **Answer:** 6°24’40.21” North 3°24’49.23” East

8. Sossusvlei, Namibia
   **Answer:** 24°44’52.49” South 15°17’53.83” East

9. Nile River Delta, Egypt
   **Answer:** 30°55’48.04” North 31°03’35.39” East

10. Cape of Good Hope, Cape Town, South Africa
    **Answer:** 34°21’25.30” South 18°28’25.25” East

**Bonus:** What feature is right on the western most point of the continent of Africa? (Not Including Islands)

   **Answer:** Resort and Golf Course (Dakar, Senegal)