Africa's Resources

from the GeoInquiries™ collection for World History

Target audience – World history learners   **Time required – 25 minutes**

Activity	Aggregate resources in Africa by country to explore the connection between resources and economic success of African countries.
Social studies Standards	**C3:D2.Geo.8.9-12.** Evaluate the impact of economic activities and political decisions on spatial patterns within and among urban, suburban, and rural regions. **C3:D2.Geo.11.9-12.** Evaluate how economic globalization and the expanding use of scarce resources contribute to conflict and cooperation within and among countries.
Learning Outcomes	• Use maps and charts to explore resources of African countries. • Clarify the numbers and types of resources in African countries with the Aggregate tool.
Level 2 GeoInquiry Requirements	• A free school ArcGIS Online organization account. Instructors or students must be signed in to the account to complete this activity. • Approximately 0.886 credits will be used per person in the completion of this activity as scripted.

Map URL: http://esriurl.com/worldHistoryGeoInquiry5

❔ Ask

How do current African country boundaries compare to boundaries in 1914?

➜ Click the link above to launch the map.
➜ In the upper-right corner, click Sign In, and then use your ArcGIS Online organizational account to sign in.
➜ To the left of the map, widen the Details pane until you see the names of the buttons and click Content.
➜ Turn off all the layers by unchecking all the boxes except Africa 1914.
➜ Review the Add A Data Layer ToolTip on the next page, and then use those steps to search for **world countries** and add the World Countries layer by esri_dm to your map.
❔ Are there more, fewer, or the same number of African countries currently than there were in 1914? *[More, as French West Africa divided into several different countries, and some country borders shifted.]*

🔍 Explore

Is there a clearer way to explore resources in each country?

– You will now create a map layer that will aggregate the minerals in Africa by country so that you can more easily evaluate the number of resources by type.
➜ Pause your pointer over the World Countries layer, and then click the Filter button.
➜ In the Filter dialog box, set the following expression: **Continent Is Africa**, and then click Apply Filter And Zoom To.
➜ In the Contents pane, turn on the Minerals In Africa layer.
➜ Review the Aggregate Points ToolTip on the next page.
➜ Above the Contents pane, click Analysis, expand Summarize Data, and then choose Aggregate Points.
① For the layer, choose Minerals In Africa.
② Ensure that Polygon is selected, and then from the drop-down list, choose World Countries and leave the Keep Areas With No Points box checked.
④ For the field to group by, choose Contents and check the Add Percentages box.
⑤ Name your new layer **Minerals in Africa by Country** and include a unique student code.
Uncheck the Use Current Map Extent box so that, in this case, you will compute population for all African countries.
Always click Show Credits to ensure acceptable credit usage, and then click Run Analysis.
➜ Turn off the World Countries and Africa 1914 layers, and then click the new layer name to display the legend.
❔ Which countries appear to have the largest number of resources? *[South Africa, DR Congo]*   more ▶

🎤 Acquire

How do resources compare to a high GDP African country?

→ Turn off all layers except the new Aggregation of Minerals layer and the Minerals In Africa layer.
→ Zoom in to South Africa and click the newly created purple dot.
→ Note the Count of Points and scroll down, slowly pausing over each slice of the pie graph and noting the percentage of each resource.
❓ Which two resources are in South Africa with the highest percentage? *[Diamonds and coal]*

📋 Analyze

How do resources compare with a low GDP African country?

→ In the top-right corner above the map, in the Find Address Or Place field, type **South Sudan** and click the newly created purple dot.
→ Note the Count of Points and scroll down, slowly pausing over each slice of the pie graph and noting the percentage of each resource.
❓ What are the three resources located in South Sudan? *[Iron, manganese, and oil]*

☑ Act

Are resources a good indicator of the wealth (or well-being) of African countries?

– According to the International Monetary Fund, in 2018–2019—along with South Africa—Egypt and Nigeria are considered to be in the top wealthiest tier of African countries, and South Sudan and Sierra Leone are considered to be in the poorest tier of African countries.
→ Click each of the aggregated resources dots for those countries and compare the number of resources in each country and the percentages of the types of resources.
❓ Are high numbers of resources the final word in wealth in African nations? *[Using the Color and Size comparison map, it is easier to see that there is some correlation between number and type of resources to wealth of African nations. However, when examining South Sudan with oil and iron and Sierra Leone with diamonds and gold, it becomes clearer that there are other factors that dictate the successful economics of African countries.]*

ADD A DATA LAYER

- Above the Contents pane, click Add and choose Browse Living Atlas Layers.
- Use the search field to search for available layers.
- When you have found a layer that you would like to add to your map, in the lower-right corner of the layer, click the Add (+) button.

AGGREGATE POINTS

- Provides a count of the points in a defined area.
- The result layer name must be unique, so consider adding three initials, school code, and a number after the layer name (example: FileName_REED_ABC1).

Next Steps

DID YOU KNOW? ArcGIS Online is a mapping platform freely available to public, private, and home schools. A school subscription provides additional security, privacy, and content features. Learn more about ArcGIS Online and how to get a school subscription at http://www.esri.com/schools. THEN TRY THIS...

• Browse for and add Living Atlas layers with Purchasing Power Per Capita for countries in Africa.
• Add several of the layers and explore the purchasing power in a specific country relative to resources.

📄 TEXT REFERENCES

This GIS map has been cross-referenced to material in sections of chapters from these middle school texts.

- *World History by Glencoe — Chapter 21*
- *World History by Prentice Hall — Chapters 22 & 27*