**Central American Population**

from the Esri GeoInquiries™ collection for World Geography

<table>
<thead>
<tr>
<th>Activity</th>
<th>Evaluate population increase in Central America over the past two decades.</th>
</tr>
</thead>
</table>
| Social studies Standards | C3:D2.Geo.8.6-8. Analyze how relationships between humans and environments extend or contract spatial patterns of settlement and movement.  
C3:D2.Geo.12.6-8. Explain how global changes in population distribution patterns affect changes in land use in particular places. |
| Learning Outcomes | • Use maps, graphs, and charts to explore population growth of Central American region and countries.  
• Acquire current population data using data enrichment tools. |
| 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.  
• Less than 1 credit will be used per person in the completion of this activity as script- ed. |

**Map URL:** http://esriurl.com/WorldGeoinquiry13

---

**Ask**

What was the population in Central America in 1998?

- Click the link above to launch the map.
- In the upper-right corner of the web page, click Sign In and use your ArcGIS Online organization credentials to sign in.
- With the Details button underlined, click the button, Show Contents.
- Pause your pointer over the Country Borders layer and click the Show Table button.
- Click the Population 1998 field header and choose Statistics.

? What was the total population of Central American countries in 1998 (Sum of Values)? [34,880,284]

---

**Explore**

How did the Central American population grow over the past two decades?

- From the toolbar above the map, click Bookmarks and choose Central America.
- See the Data Enrichment ToolTip on the next page.
- Click Analysis, expand Data Enrichment, and choose Enrich Layer.
- From the drop-down list, choose Country Borders.
- Click Select Variables, and in the top-right corner, accept Global, and then from the options below, choose Population.
- Click Key Global Facts, Key Demographic Indicators, check the Total Population box, and then click Apply.
- Name your new layer.
- Leave the Use Current Map Extent box checked so that, in this case, you will compute population for all Central American countries.
- Always click Show Credits to ensure acceptable credit usage, and then click Run Analysis.
- Using the table for the population layer that you just created, scroll to the right to Total Population and calculate Statistics.

? What was the total population of Central America in 2018? [48,059,895]
Acquire

How can we easily visualize change in population from 1998 to 2018?

- Divide the total population in 2018 by 1998.
- What was the percentage of growth of Central America between 1998 to 2018? [138%]
- In the Contents pane, uncheck the Country Borders layer box to turn off the layer.
- Under the new Total Population layer, click the More Options button (ellipses) and choose Configure Pop-up.
- Under Pop-up Media, click the Add down arrow and choose Column Chart.
- Check the Pop_Country and the new Total Population layer boxes.
- For Caption, type Pop Change from 1998 to 2018, and then click OK twice.

Analyze

Which countries in Central America had the largest/smallest population?

- In the map, click any country in Central America.
- Scroll down the pop-up and pause your pointer over each column in the chart.
- What was the population in 1998? 1999? [Answers will vary depending on which country students choose.]
- Continue clicking each country to view the chart in each pop-up.
- Which country had the largest population in 2018? Smallest population? [Guatemala, Belize]

Act

Which countries in Central America grew the fastest in those 20 years?

- Repeat the process from the previous section and note the graphs in the pop-ups.
- Which country grew the most and by what percentage? [Guatemala, 154%]

DATA ENRICHMENT

- Choose the layer to Enrich and click Select Variables.
- Choose the geographic area on top right and Key Global Facts.
- Click on text, Key Demographic Indicators. Choose from instructions.

POP-UPS AND COLUMN CHARTS

- On the layer, choose More Options button (ellipses) and choose Configure Pop-up.
- Under Pop-up Media, click the Add down arrow and choose Column Chart.
- Check the layer boxes and type in caption.
- Click OK twice to save.

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...

- To see the rate of population increase of each country, click the More Options button (ellipses) for the new population layer and choose Configure Pop-up.
- Under Pop-up Media, click the Add down arrow and add a new Column Chart.
- For Normalize By, choose Pop_Cntry.

TEXT REFERENCES

- World Cultures and Geography by McDougal Littell
- My World Geography by Pearson

WWW.ESRI.COM/GEOINQUIRIES Copyright © 2019 Esri