Net Migration
from the Esri GeoInquiries™ collection for World Geography

Target audience – World geography learners
Time required – 20 minutes

Activity
Identify countries with a net migration that is less than -4.

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
• Find countries with net migration less than -7.
• Explore the connection of emigration to various standards of living (SOL).

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 .5 credits will be used per person in the completion of this activity as scripted.

Map URL: http://esriurl.com/WorldGeoinquiry7

Ask
Where might negative migration related to life expectancy occur?

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.
To the left of the map, widen the Details pane until you see the names of the buttons and click Content.
Above the map, click Bookmarks and choose World.
In the Contents pane, turn off the SOL-Population 65 years Or Older layer and turn on the SOL – Life Expectancy layer.
Focusing only on life expectancy, which countries do you think would have a negative migration? [Much of Africa, Afghanistan]

Acquire
How can you use analysis to help find countries with negative migration rates?

See the Derive New Locations ToolTip on the next page.
On the Map Viewer toolbar, click Analysis.
In the Perform Analysis pane, expand Find Locations and click Derive New Locations.
In the Expression Builder, click Add Expression and build the following expressions:
SOL-Net Migration Where Net Migration Is Less Than 0
SOL-Net Migration Where Net Migration Is Not -999
Provide a name for the new layer.
Leave the Use Current Map Extent box checked so that, in this case, you will compute all countries with net migration less than 0.
Always click Show Credits to ensure acceptable credit usage, and then click Run Analysis.
Is net migration close to 0 a good measure of countries with high emigration? [The closer-to-0 net migration reflects the natural ebb and flow of people into and out of a country.]
Explore

Where does a net migration figure more closely reflect residents leaving a country due to negative factors?

- In the Contents pane, turn off the new Negative Net Migration layer that you created previously.
- Access the Derive New Locations tool again.
- In the Expression Builder, click Add Expression and build the following expressions:
  - SOL-Net Migration Where Net Migration Is Less Than -7
  - SOL-Net Migration Where Net Migration Is Not -999
- Provide a new name for the new layer.
- Click Run Analysis.
- What do you notice when net migration is less than -7? [There are only a few countries that have a negative net migration of less than -7.]

Analyze

Why do you think people emigrate in higher numbers from some countries?

- Find and click the country of Moldova.
- What is the net migration rate? [-9.80]
- Turn on the SOL-GDP Per Capita and the Literacy Rate layers and click Moldova.
- What is the GDP per capita? The literacy percentage? [2000; 99%]
- To what might you attribute the high literacy rate but very low GDP per person? [Rapid emigration was precipitated during the fall of the Soviet Union.]

Act

Does the same factor cause higher emigration rates for each country?

- Choose another country and repeat the steps that you performed in the Analyze section.
- Did you find any correlation between the data in the layers provided that might explain higher emigration rates? [Answers will vary, and students may need to do some external research to explain.]

DERIVE NEW LOCATIONS

- This tool creates new features in your study area that meet a series of criteria that you specify.
- These criteria can be based on attribute queries (for example, parcels that are vacant) and spatial queries (for example, within 1 mile of a river).

SELECT FEATURES IN A MAP

- In the map, click a feature.
- In the upper-right corner of the pop-up window, click the arrow until you see the data for the layer that you are interested in.

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...

- In this activity, you used the Derive New Locations analysis tool to find countries with negative net migrations.
- Use the same Derive New Locations analysis tool to find countries that have high immigration, and explore those patterns as you did the emigration (out migration).

TEXT REFERENCES

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

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

WWW.ESRI.COM/GEOINQUIRIES copyright © 2019 Esri