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.
- ① 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
- ② 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.]*

more ▶

🔍 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.

① 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

② 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*