

# GIS For Schools

# Predicting the future

Lesson Map: http://esriaustralia.com.au/education/SpatialActivity30

### **Engage**

'Us' and 'Them'

? When we talk about the world as geographers, we often to divide countries into first or third; and developed or developing. Brainstorm the criteria in which you would split these countries (what are the differences between them).

'First'	'Third'

### **Explore**

Mapping 'The Divide'

- → Click on the Lesson Map URL above to open the map. In the 'Details' pane, under 'Content', tick the first checkbox to turn on the layer 'Countries with the lowest HDI'. Turn off all other layers.
- Human Development Index is a measure that combines a country's life expectancy, education, and per capita income indicators. The HDI layer may be a good indication of the development of a country, and consequently which list a country should belong to.
- ? What is the spatial distribution of the lowest HDI scores in the world? Most of the countries are located in Africa, apart from Haiti, Afghanistan and Yemen.
- Click on layer name so icons appear below it. Click the table symbol to show the data.

  Countries with the lowest Human Development

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# Download student worksheet here.

Time 30 minutes

### Activity

Predicting life in 2100.

### Learning Outcome

Students will be able to:

- Look at their current perceptions of the world
- Analyse current HDI scores
- Analyse current income levels
- Theorise what life will be like as countries transition between levels

### ACARA Curriculum Link

Year 12 Geography: Global Transformations

ACHGE101 | ACHGE102

#### Teacher Feedback:

To share your feedback on this, or any Spatial Activity, please contact <a href="mailto:education@esriaustralia.com.au">education@esriaustralia.com.au</a>

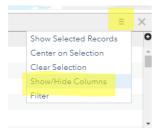
If you would like the Word document version to edit, please contact education@esriaustralia.com.au

This spatial activity was inspired by the novel *Factfulness* by Dr Hans Rosling.



### GIS For Schools

→ Show all of the columns by selecting the 'Options' button, then 'Show/Hide Columns', 'All Columns'.



→ Sort the HDI column by 'Ascending' to show lowest to highest scores.



- **?** Which country has the lowest HDI score? Central African Republic, with a score of 0.352.
- → Life in Central African Republic, likely contains a lot of the elements you suggested in your table earlier. To see what life is like in these countries, visit <a href="Dollar Street">Dollar Street</a>.

### **Skills**

#### Dr Hans Rosling

- → Many people have since argued (and successfully) that the world could not be split so evenly into two. One of the biggest advocates for this was Dr Hans Rosling. He argued that we could divide the world in four categories based on income level.
- ? Turn on the layer 'World Income Levels'. Turn off all other layers. You can see similar patterns emerging out of Africa. What other countries scored on level 1 (red)? North Korea, Nepal, Afghanistan and Haiti.
- → Dr Rosling argued that people would eventually transition from Level 1, to 2, to 3, to 4 as time progressed, reducing global poverty rates (much like the Demographic Transition Model).
- ? What is the link between income and fertility? As women become more educated, they generally have less children as they focus on careers and move away from the previous need for large families (many children either died or were needed for harsh manual labour).

Spatial Activity Classroom GIS Initiative 2



## GIS For Schools

- Turn on the layer 'Total Fertility UN Projection 2100'. This layer represents the predicted countries with the highest and lowest fertility rates by 2100. The lowest, are represented by green, whilst the highest are represented by pink.
- ? What countries are predicted to have the highest fertility rate in the world by 2100? Many African countries, with the highest fertility rate in Zambia.
- ? Click on the symbol for Zambia. What is the fertility rate predicted to be in Zambia? 2.46 babies per woman.
- ? Today, Zambia's fertility rate sits around 5.63 children per woman. In 90 years time, Zambian women will be having nearly 3 less children each. Using Zambia as an example, what does this tell you about life in Africa by 2100? Students own answer.

### **Extend**

#### The West is no more?

- ? When we talk about high population, what two countries come to your mind? China and India.
- Turn on the layer '2100 Middle Scenario Population Growth'. Turn off all layers.
- **?** By 2100, what continent will have experienced a similar population growth as Asia has today? Africa.
- It is important to realise that women in Africa will be having less children than ever before, but it takes years for this impact to be felt in population data.
- What does this mean for Western Countries? How will life change for "The West" when a significant portion of the world will be living in (or from) Asia or Africa? Students own answer.

### **Next Steps:**

#### Request a free ArcGIS Online Account for your school:

Australian schools can request a free ArcGIS Online account as part of Esri Australia's Classroom GIS Initiative. A school subscription provides additional map layers, content, features and privacy.

 $Learn\ more\ about\ ArcGIS\ Online, and\ apply\ for\ your\ ArcGIS\ Online\ School\ subscription\ at \ \underline{http://esriaustralia.com.au/education}$ 

Spatial Activity Classroom GIS Initiative 3