**Unit: Population Growth and Decline over Time and Space**

**Lesson Plan:** Demographic Transition Model

**Name/ Grade/ Subject**: Kathryn Davis/ IB grade 11/ Geography

**Objectives/ Goals:**

* To consider how we use models to assess one aspect of the world and examine it through generalizations to create a larger global picture and how this can sometimes be problematic
* To highlight how ways of thinking about the world change over time
* To develop a sense of development around the world and how development is often seen though a western, euro-centric lens
* To develop students ability to analyze the future of Canadian society
* To engage in active participation and critical dialogue.

**Direct instruction:**

1. What is a model? (10 minutes)
   1. *Use a globe to show what a tangible model is and ask questions like what can we infer from this globe, what cant we learn from it? What is the purpose of having a globe and why is having a simple representation of the world problematic?*
   2. a representation of some phenomenon of the real world made in order to facilitate an understanding of its workings
   3. a simplified and generalized version of real events, from which the incidental detail has been removed
   4. a model is ALWAYS a generalization because the real would is ALWAYS more complex and dynamic.
2. The demographic transition model (30 minutes)
   1. *Explain the stages of development- give everyone a sheet of paper so that they can draw along with me as I draw it on the board (explain that this will be an important study aid and that they will need it for homework assignment). First only write the the two variables on the board: Crude Birth Rates and Crude Death Rates*
      1. The demographic transition model explains the transformation of countries from having high birth and death rates to low birth and death rates.
      2. Developed in 1929 by the American demographer Warren Thompson
      3. In developed countries this transition began in the 18th century and continues today.
      4. Less developed countries began the transition later and many are still in earlier stages of the model.
      5. A crude birth rate is the number of live births in a population of a geographical area during a given year, per 1,000 population of the geographical area during the same year.
      6. A crude death rate is the number of deaths occurring among the population of a geographical area during a given year, per 1,000 population of the geographical area during the same year.
   2. *Draw the model- Ask the class what do you think happens next? Why?? Where??*
      1. Stage one (Pre-industrial): Death and Birth Rates are high
         1. WHY? Death is high because disease, famine, lack of clean water and health care, war, education and competition for food. Birth is high because lack of family planning, high Infant Mortality Rate, need for workers (children are economic asset), religious beliefs
         2. WHERE? UK pre 1760/ Amazon Basin Tribes
      2. Stage two (Developing): Death Rates begin to fall/ Birth rates remain high
         1. WHY? Improved health care (e.g. Smallpox Vaccine), improved hygiene (Water for drinking boiled), improved sanitation, improved food production and storage, improved transport for food, decreased Infant Mortality Rates
         2. WHERE? UK 1790-1870 (industrial revolution)/ Ethiopia, Bangladesh, Nigeria
      3. Stage three: Death Rates continue to fall/ Birth rates begin to fall
         1. WHY? Family planning available, lower Infant Mortality Rate, increased mechanization reduces need for workers, increased standard of living, changing status of women
         2. WHERE? UK 1870- 1950 (technological revolution)/ India, China, Brazil
      4. Stage four: Death rates are low/ Birth rates continue to fall
         1. WHERE? Post 1950 UK, USA, Sweden, Japan
      5. Stage five: Death rates remain low/ Birth rates fall below death rates
         1. WHY? Birth rate is low because of family planning, better health, later marriages, improved status of women. Deaths are low because of good health care, reliable food supply, people are generally living longer
         2. WHERE? Germany
3. Understanding this Model: (10 mins)
   1. *As a class discuss some of the limitations of the model. Afterwards get the students to partner up and think about which limitation seems most significant- why?*
   2. What are the limitations of this model?
      1. It does not include the influences of migration
      2. It assumes that all countries will go through the same pattern- technology and knowledge change the speeds of development
      3. There is no time scale
      4. Reasons for birth rates and death rates are very different in different countries
      5. It is euro-centric: The underlying premise of the classic Demographic Transition Model is that all countries will eventually pass through all four stages of the transition, just as the countries of Europe did.
      6. Does not predict the future
      7. Relies on demographic data- might not be present everywhere
      8. Countries can go back stages on the model in real life.  Zimbabwe made moved forward under Robert Mugabe but over the past 2 decades Zimbabwe has slipped back due to famine, internal strife and HIV and AIDS.

**TOK Component:** (10 minutes)

* *Number the groups off by one and two. Get groups one to pretend to be from the working force point of view, get one group to be from the retired point of view. Draw two columns on the board and get them to write down their findings (2 mins). Go through them as a class, did the age of the population make a difference to the opinions? Why? (5 mins).*

1. Can countries around the world with aging populations continue to flourish socially, culturally and economically into the future?
2. Can new kinds of education help countries with aging populations? What might this look like for our future?
   * Diversity education
   * Need to learn new languages
   * Restructuring of retirement plans

**Individual Assignment:**

* Students are given three countries data on crude Birth dates and Crude death rates; they need to figure out where the countries are in their stages of development and why they think so. They need to research the reasons why the outlier country does not fit neatly in the model.

**Required Materials:**

* Globe to show as a model
* Papers for students to draw their charts
* Extra pens
* Chalk for the board
* Handout of Crude Death Rates and Crude Birth Rates for a variety of countries that the students would need to add to their charts- Homework assignment

**Resources:**

<http://stats.oecd.org/glossary/detail.asp?ID=491> (accessed September 5)

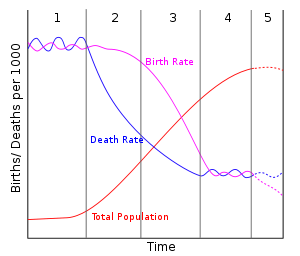
<http://www.coolgeography.co.uk/A-level/AQA/Year%2012/Population/DTM/DTM%20new.htm> (accessed September 5)

<http://en.wikipedia.org/wiki/Demographic_transition> (accessed September 5)

[www.wsfcs.k12.nc.us/cms/lib/NC01001395/Centricity/.../3dtm.ppt](http://www.wsfcs.k12.nc.us/cms/lib/NC01001395/Centricity/.../3dtm.ppt) (assessed September 5)

<http://apcentral.collegeboard.com/apc/members/courses/teachers_corner/50105.html> (accessed September 5)

<http://www.learner.org/courses/envsci/interactives/demographics/demo_transition_1.php> (accessed September 5)



**Lesson 2: Burgess Concentric Circle (presented Hyosun Kang)**

**Lesson 3:** Rostow’s Stages of Growth

**Objectives:**

* Understand the stages of Rostow’s Growth model and how it affects population growth and decline
* To encourage students to think about affective collaboration by assign roles within their own groups. One person will present the groups finding to the rest of the class
* For students to draw connects between economics and populations theory, and to think globally why some countries are in different stages than others.

**Direct Instruction:**

* Class discussion on the 5 stages of Rostow’s model: Discussion through inquiry method- students generate the answers to what happens next and why
  + Stage One: Tradition Society
  + Stage Two: Pre- Conditions for Take-Off
  + Stage Three: Take-Off
  + Stage Four: The Drive to Maturity
  + Stage Five: Age of High Mass Consumption
* Split the class into 5 groups and assign a stage to each group- make sure that every group assigns roles to their group mates. Each group investigates that stage more thoroughly- what countries could be associated with this stage and why, and how the particular stage would affect the population growth or decline in that geographic area.
* Have all the groups present their finding to the other students
* Have a class discussion on the strengths and weaknesses of the Rostow Stages of Growth Model.

**TOK component:** Are economic growth and population growth or decline intrinsically linked, or do they happen independently of each other? Do economic models have a place in population policies, if so, what can they offer?

**Individual assessment:** Consider one country that is in Stage 5, one country that is in Stage three and one country you believe to be in-between stages (any of the stages is fine). Through the use of pictures and text describe why the country fits into the category you chose for it.

**Lesson 4:** Populations and Natural Hazards

**Objectives:**

* To examine populations that exist in areas of frequent natural disasters
* To highlight the risks of specific natural disasters on geographic areas in north America with high population density
* Inquiry why people have decided to live in high- risk areas

**Direct Instruction:**

* Do a mapping exercises with a data worksheet that gets students to locate the top 10 highest density cities around the world- research in pairs the specific natural disasters of three of the top ten cities.
* Discuss as a class how people might manage living in places like these. What kinds of systems are in place for natural disasters in these areas… ex Response systems, warning systems, systems that measure the size, level, intensity, etc.
* Discuss as a class what affect this might have on world populations. Get volunteer students to research the specifics of the discussion like death tolls, disease rates, migration patterns in or out of the area, etc.
* In groups of four, discuss the TOK question about countries social responsibility to react to natural disasters that occur globally.

T**OK component:** Should there be policy and law around the establishment of cities in particular high-risk geographies? Is there/ should there be a social responsibility as a country to help other countries who suffer from natural disasters? What are some contemporary examples of this?

**Individual assessment:** Make an at home earthquake kit (a list of what need to be included will be provided). Take a picture of the kit and bring it to class with a short reflection why it is important to prepare in BC.

<http://teacherweb.ftl.pinecrest.edu/snyderd/APHG/projects/Core-Periphery%20Model/Core-Periphery.htm> (accessed September 5)

**Lesson 5:** Thomas Malthus Theory of Human Population Growth

**Objectives:**

* To understand Malthus Theory on population growth
* Have students be able to question the validity of a theory
* Get students to collaborate with each other in an inquiry exercise

**Direct Instruction:**

* Watch clip on population from <http://education-portal.com/academy/lesson/thomas-malthus-theory-of-human-population-growth.html#lesson>
* What did Malthus predict?
* Activity: Imagining (in groups of three) that the world turned out exactly as Malthus predicted how might we expect it to look today? Afterwards find another group of three- does that group have the same prediction?
* Was Malthus correct?

**TOK component:** Do you believe there are limits to how many people can live on earth? How might we remain sufficiently supported by the earth’s resources while the population increases?

Individual assessment: Get students to response to Thomas Malthus Theory by creating a new theory with what they now know about modern population growth.