TITLE:
Linking Social Studies History and Geography with Mathematics

DIVISION:
Intermediate

STRAND:
Geography

GRADE 7: DEFORESTATION COMPARISON

These activities link Geography with data management expectations in math.

BIG IDEA

Deforestation continues to be a major global concern, yet deforestation in Canada is extremely low in comparison to other nations.

Guiding Question(s)

How can we compare deforestation around the world? How does human activity impact the environment?

Framing Question(s)

- Why has deforestation in Canada decreased over the past 30 years and why has it increased in other nations?

- What lessons can be learned from the Canadian forestry practices and potentially implemented in other nations to reduce the rate of global deforestation?

Learning Goals

- make links between past and current practices to determine what has stayed the same and what has changed
- explain why something has changed or stayed the same in the natural environment and / or human society in a period of time
- determine what I think is the most important change and / or the most important thing that stayed the same that has occurred in the natural environment or in the community in a period of time

CONCEPTS OF DISCIPLINARY THINKING

Continuity and Change

This concept requires students to determine what has stayed the same and what has changed over a period of time. Continuity and change can be explored with reference to ways of life, political policies, economic practices, relationship with the environment, social values and beliefs, and so on. Students make judgements about continuity and change by making comparisons between some point in the past and the present, or between two points in the past.

Social Studies Inquiry Process (Revised [2013] SSHG Curriculum page 23)

Inquiry Process:

The students will collect, review and analyse the deforestation data presented in the graphs, charts and reading through the links outlined below and determine trends in the data. The students will then use the trends they find in the data to determine why they believe global deforestation continues to rise while it is decreasing in Canada. The students will then create a list of suggested actions nations and the United Nations could implement to reduce global deforestation.

The Social Studies Inquiry Process Model can be viewed on page 23 of the 2013 Social Studies Curriculum that can be viewed through the link below.

http://www.edu.gov.on.ca/eng/curriculum/elementary/sshg18curr2013.pdf

The Spatial Skills: Using Maps, Globes, and Graphs (Ontario Curriculum pages 24-25)

Spatial Skill:

Students will interpret graphs and charts to evaluate data and determine trends within to generate hypotheses on possible solutions to a problem.

PRIMARY ACTIVITY

The students will participate in a diagnostic activity where they will review and evaluate a line graph on global population trends, they will review data charts and graphs on global and Canadian deforestation, determine trends in the data, use these trends to draw conclusions and then develop an action plan to reduce global deforestation.

The students will complete the following in this activity:

www.oessta-teachers.com

- Review the population trends line graph from the United Nations to help the teacher determine their background knowledge of population trends, factors that affect these trends, and their ability to analyze and interpret graphs
- Review global and Canadian deforestation data through charts, tables and graphs and determine the trends in the data
- Draw conclusions about the trends they see in the data and the causes of these trends
- Hypothesize why they think Canada has a low deforestation rate even though its population is rising, whereas global deforestation has risen dramatically with the rise of the global population
- Create an action plan to reduce global deforestation that they could theoretically present to the United Nations
- Include a summary of the data from the charts, tables and graphs that were examined, a review of the trends and conclusions from the data and the action plan for the United Nations
- Submit electronically or by hand and present orally to the class

This activity could also be conducted using deforestation data from Brazil and Non – Brazil Amazon related nations through the links below. Furthermore, a comparison of deforestation rates in Canada compared to Brazil and other South American nations could be conducted.

Deforestation Rates in Brazil

http://newswatch.nationalgeographic.com/2009/11/13/amazon_deforestation_slows/

Deforestation in Non–Brazilian Amazon Countries:

http://www.desdemonadespair.net/2013/08/graph-of-day-deforestation-in-non.html

http://news.mongabay.com/2013/0626-amazon-deforestation.html

DIFFERENTIATION SUGGESTIONS

Word prediction software could be provided to those students who need support with their writing when they answer the main questions of the activity. This could also be a group assignment and the final product could be presented through a multi-media presentation (Glogster, Powerpoint, etc.).

Edugains outlines many effective ways to differentiate lessons, links to these resources are provided below.

http://www.edugains.ca/newsite/index.html

Edugains – Differentiated Instruction - DI educators package – DI scrapbook:
http://www.edugains.ca/newsite/di2/edupackages/2010educatorspackage.html

TECHNOLOGY INTEGRATION OPPORTUNITIES

The students could use iPad applications (United Nations, Numbers, etc..), Microsoft Office or other word processing and multimedia generating software to create their assignments.

ASSESSMENT

A FOR L Put up the global population line graph through the link posted below and discuss it with the students. Ask students why they think the global population has risen so dramatically in the last 150 years, what impact this growth might have on the environment, and why a line graph was chosen to display this data. This exercise will help determine the background knowledge students have on population trends and their impact, their ability to read a line graph and their knowledge of when and why it is used to display certain types of data.

http://resources1.news.com.au/images/2011/10/26/1226177/680601-111027-n-population-growth.jpg

A AS L Based on the initial activity, the teacher and the students could develop an anchor chart to analyse graphs and determine trends that are evident in the data. The students and the teacher could also develop a chart that outlines the expectations of the students' final product of the assignment so that they know what is expected of them.

Descriptive feedback is another assessment strategy teachers could use to provide students with the constructive criticism they need to improve their work.

Students will review the information posted on the anchor charts to track their own progress in relation to the assignment and determine their own next steps. They will also be expected to act upon any descriptive feedback that they have been given by their teacher to improve their work, work habits, or to help facilitate their completion of the assignment.

A OF L The students and the teacher could develop a rubric together that evaluates the students' ability to find relevant trends within the data, use the trends to draw conclusions about deforestation, and their ability to develop an action plan to reduce global deforestation that could be adopted by the United Nations.

OVERALL EXPECTATIONS

Grade 7 Geography:

A1. Application: analyse some challenges and opportunities presented by the physical environment and ways in which people have responded to them (FOCUS ON: *Spatial Significance; Interrelationships)*

A2. Inquiry: use the geographic inquiry process to investigate the impact of natural events and/or human activities that change the physical environment, exploring the impact from a geographic perspective (FOCUS ON: *Geographic Perspective)*

A3. Understanding Geographic Context: demonstrate an understanding of significant patterns in Earth's physical features and of some natural processes and human activities that create and change those features (FOCUS ON: *Patterns and Trends; Spatial Significance)*

Grade 7 Math – Data Management:

Overall Expectations #2: make and evaluate convincing arguments, based on the analysis of data

SPECIFIC EXPECTATIONS

Grade 7 Geography:

A1.1 describe various ways in which people have responded to challenges and opportunities presented by the physical environment

A2.1 formulate questions to guide investigations into the impact of natural events and/or human activities that change the physical environment

A2.2 gather and organize data and information from a variety of sources, and using various technologies, on the impact of natural events and/or human activities that change the physical environment, ensuring that their sources reflect more than one perspective

A3.7 describe some key natural processes and other factors, including human activities

Grade 7 Math – Data Management
#1 - read, interpret, and draw conclusions from primary data (e.g., survey results, measurements, observations) and from secondary data (e.g., temperature data or community data in the newspaper, data from the Internet about populations) presented in charts, tables, and graphs (including relative frequency tables and circle graphs)

4 - identify and describe trends, based on the distribution of the data presented in tables and graphs, using informal language

#5 - make inferences and convincing arguments that are based on the analysis of charts, tables, and graphs (Sample problem: Use census information to predict whether Canada's population is likely to increase.)

CITIZENSHIP EDUCATION FRAMEWORK

Structures:
- Develop an understanding of the dynamic and complex relationships within and between systems

- Develop an understanding of how political, economic, and social institutions affect their lives

---

RESOURCES

- Global Deforestation PDF (pg. 9)

http://www.fao.org/docrep/016/i3010e/i3010e.pdf

- Deforestation in Canada

http://cfs.nrcan.gc.ca/pubwarehouse/pdfs/28159.pdf

- Deforestation Rates in Brazil

http://newswatch.nationalgeographic.com/2009/11/13/amazon_deforestation_slows/

- Deforestation in Non – Brazilian Amazon Countries:

http://www.desdemonadespair.net/2013/08/graph-of-day-deforestation-in-non.html

http://news.mongabay.com/2013/0626-amazon-deforestation.html