the
sustainable
society

Introduction

We are at a pivotal moment in history. We face an epidemic of short-term thinking which prioritizes profit above all else. Distressing evidence revealing the toll our voracious modern lifestyles have on the Earth continues to arise. The consequences of our seemingly insatiable desire for newer, better, and more, can no longer be ignored.

Fear for the future has ignited demand for a more balanced, holistic approach to growth and development models. People across the globe have begun questioning dominant paradigms of success and progress. This project seeks to provide students with a different lens through which to see the future of society; to empower them by learning that there is another way.

The Sustainable Society, our sixth Common Threads initiative, brought together a dynamic team of six educators from across the province. They travelled to Venezuela and Norway, two uniquely different countries, to explore different approaches taken to maintain social justice, equity, fairness, and democracy.

Throughout this project, comparisons and contrasts are made between Canada, Venezuela, and Norway; the common denominator of this atypical cohort being petroleum. Managing the extraction, production, and distribution, of this precious non-renewable resource has a direct and indisputable impact on the ability of a society to be sustainable.

The two countries chosen for the project both have distinct models of development. These models offer Canada a variety of options to examine as we move towards a sustainable society.

The two models examined in this project are:

1. The Nordic Model as seen in Norway
2. The Bolivarian Revolution as seen in Venezuela

The Nordic Model

This model of development incorporates free market capitalism and social benefits. These benefits are paid for via taxes and managed by the government for the good of all citizens. This creates a mixed economic system that reduces the gap between the rich and the poor through redistributive taxation and creates a strong public sector while preserving the benefits of capitalism. Norway nationalized their North Sea petroleum resource. This permitted them to utilize a percentage of the proceeds to enhance and extend their social programs, mainly health and education. Development of the petroleum resource was not dictated by the needs of "quarterly returns on investment," but rather by the needs of society. The majority of the profits from oil have been placed into a reserve fund, taking the value of the "Natural Bank" and transferring to economic security for future generations.
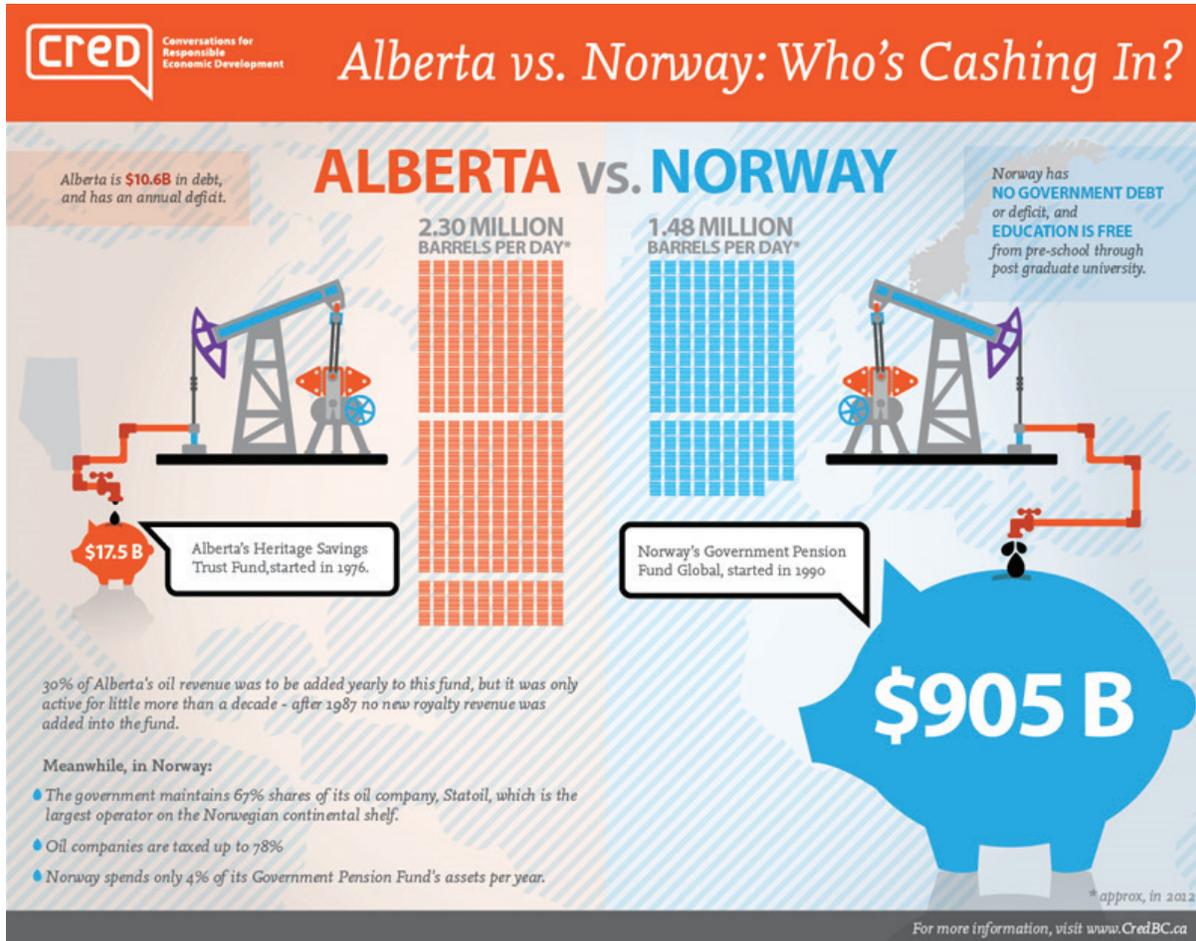
The Bolivarian Revolution

The "Bolivarian Revolution" refers to a leftist political process and social movement in Venezuela initiated by late Venezuelan president Hugo Chávez. The "Bolivarian Revolution" (named after Simón Bolívar, an early 19th-century Venezuelan and Latin American revolutionary leader) seeks to create a mass movement to realize Bolivarianism (popular democracy, economic independence, equitable distribution of revenues, and an end to political corruption) in Venezuela. This policy (Chavismo) has nationalized several key industries, including the petroleum industry, with the proceeds from such development intended for improving health care and education, reducing poverty, and improving the literacy of the population. Chavismo policies include nationalization, social welfare programs (Bolivarian Missions), and opposition to neoliberalism (particularly the policies of the IMF and the World Bank).

Both Norway and Venezuela used their petroleum resource for the benefit of society but with differing impacts on social sustainability. This is in contrast to the North American approach where development of the petroleum resource does not consider long term social, environmental or economic sustainability, but instead prioritizes maximizing return on investment. Interestingly, the idea of using the profits from oil for the benefit of society originated in Canada.

The Canadian Model that never was

Both Alberta and Norway began extracting oil in the early 1970s. Since then Alberta has extracted approximately 54 billion barrels to Norway's 38 billion barrels. In 1976, the Premier of Alberta at the time, Peter Lougheed, created the Heritage Savings Trust Fund, and began depositing 30 per cent of oil royalties. Lougheed hoped to diversify the province's economy and devoted much of the funds to hospitals, education and rail transport for grain. However, when oil prices sank and provincial revenues dropped Alberta stopped adding new royalty money to the Fund. In the mid-1990s, the province created general revenue by withdrawing yearly investment income from the fund. Alberta turned management of the fund over to the new Alberta Investment Management Corp. in 2008.

Norway hoped to build a domestic oil industry in 1972 with the creation of Statoil, which is now the 10th-largest oil company in the world, and still 67 per cent state-owned. In 1990, Norway created the Petroleum Fund, based on the model of the Alberta Heritage Savings Trust Fund, and began depositing tax and licensing revenues from private oil companies, as well as the interest and dividends from Statoil. Now known as the Government Pension Fund Global, it is currently the world's largest sovereign wealth fund and is valued at 7300 billion Kroners or approximately $1.2 trillion Canadian Dollars. In contrast, as of March 31, 2015, the Alberta's Heritage Savings Trust Fund's assets had fair market value of $17.9 billion.

CReD — Conversations for Responsible Economic Development

Alberta vs. Norway: Who's Cashing In?

ALBERTA VS. NORWAY

Alberta is **$10.6B** in debt, and has an annual deficit.

2.30 MILLION BARRELS PER DAY*

1.48 MILLION BARRELS PER DAY*

Norway has **NO GOVERNMENT DEBT** or deficit, and **EDUCATION IS FREE** from pre-school through post graduate university.

$17.5 B

Alberta's Heritage Savings Trust Fund, started in 1976.

Norway's Government Pension Fund Global, started in 1990

$905 B

30% of Alberta's oil revenue was to be added yearly to this fund, but it was only active for little more than a decade - after 1987 no new royalty revenue was added into the fund.

Meanwhile, in Norway:

- The government maintains 67% shares of its oil company, Statoil, which is the largest operator on the Norwegian continental shelf.
- Oil companies are taxed up to 78%
- Norway spends only 4% of its Government Pension Fund's assets per year.

*approx, in 2012

For more information, visit www.CredBC.ca

Initially conceptualizing what this project would look like proved challenging for the team. Determining all the factors which compose a sustainable society was no easy task. However, the vision of empowering students with the knowledge that there is another path to choose was the primary driving force. Poverty and environmental degradation are not inevitable if we embrace sustainable lifestyles and demand sustainable policies.

The lessons in this project have been organized into four units which conceptually build on each other but also work as stand-alone lessons. Students will engage in a range of independent and collaborative activities. All lessons were designed using the inquiry model to facilitate intellectual curiosity and critical thinking, in-line with recent Ontario curriculum revisions.

Unit 1: Sustainability

The concept of sustainability encompasses multiple intersecting elements. Positionality and location are fundamental ideas in sustainability discourse. Acknowledging our place on planet earth is a necessary starting point. Introductory discussions about non-renewable resources and our fixation with economic growth are also essential.

Unit 2: Individual choices

What difference can I make? This is not an uncommon teenage sentiment. Youth and adults alike need practical avenues to live more sustainably and contribute to making society more sustainable. Individually reflecting consumption habits and food choices provides opportunity to consider possible changes that contribute to a sustainable lifestyle.

Unit 3: Community choices

Taking a step outside of oneself and investigating how decisions are made in society is a step toward freedom, autonomy, justice, and sustainability. Finding a voice through participation in the democratic process or artistic expression allows citizens to raise awareness in the public sphere; increasing transparency of government actions at the local and national level.

Unit 4: System choices

The big picture of sustainability illuminates the interconnectedness of sustainable resource development, sustainable environmental practices, and sustainable economies, as explicitly clear equally important tenets in developing a sustainable society, promoting vital 'systems thinking.'

Examining the state of the planet and its environment can be a daunting task. Often these topics can leave students feeling overwhelmed and depressed. One of the main means of overcoming these feelings of despair is finding hope. It is vital that students feel empowered to change the systems that determine our future. By giving students opportunities to actively engage with social, environmental and economic issues we hope to empower them to act for change. We hope that they will see themselves as agents of change and that through their actions they can find hope for a better tomorrow. *The Sustainable Society* focuses on how countries need to change in order to be sustainable. This requires a change in mindset. This action-based project is designed to give hope to both teachers and students. Students need to think for sustainability today, we all do.

Alternative Energy: is any energy source that is an alternative to fossil fuels such as solar, wood, biomass, geothermal etc.

Carbon Footprint: measures the emission of greenhouse gasses caused by an individual, activity or corporation.

Changemaker: one who desires change in the world and by gathering knowledge and resources, makes that change.

Consumption: citizens buy products or goods or services.

Conventional Energy: are energy sources such as oil, gas and coal or fossil fuels that lead to an increase in greenhouse gas emissions and other environmental damage.

Culture: is a set of customs, traditions and values of a society or community.

Democracy: is a form of government in which the power resides in the people and exercised by them directly or by means of an elected representative.

Disposal: throwing products out when you are finished using them.

Distribution: moving the products to the consumer.

Eco-Footprint: measures the amount of natural resources an individual, a community, or a country consumes in a given year.

Eco-Rights: also known as ecological rights or the right to a healthy environment, consistently enforced environmental laws & regulations, right to clean air, water, food and land.

Economics: is the study of how people use scarce resources to satisfy unlimited needs and wants.

Egalitarianism: is creating equality, whether on a human, social or economic scale, for all the citizens of the planet.

Environmental Political: is an academic field of study focused on the study of political theories, the examination of the political environmental stances of both mainstream political parties and environmental movements.

Environmentalist: a person that supports the political and ethical movement that seeks to improve and protect the quality of the natural environment through changes in environmentally harmful human activities.

Extraction: removing natural resources.

Food Miles: refer to the distance that food is transported from the site of production until it reaches the consumer.

Food Sovereignty: the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods and their right to define their own food and agriculture systems.

Genuine Progress Indicator (GPI): is a means of measuring the progress of a nation by adjusting the Gross Domestic Product (GDP). GPI is calculated by adjusting GDP by subtracting social and environmental costs, and adding in the value of non-market productive activity, such as volunteer work and child rearing.

Grassroot Movements: are small community organizations or groups that start with a local idea and expand from there.

Gross National Happiness: is a means of measuring the progress of a nation by determining how happy the populace is. It is measured using four pillars: sustainable and equitable socio-economic development; preservation and promotion of cultural values; conservation of the environment; and establishment of good governance.

Happy Planet Index: is life satisfaction times live expectancy divided by ecological footprint.

Inflation: general increase in the price level over time.

Neoliberalism: is a laissez-faire economic policy. This form of system supports economic liberalization policies such as removal of the government from corporate ownership, deregulation of the markets, free trade, and reduced government spending to improve the role of the private sector of the economy.

Oil Addiction: how heavily the world depends on oil to maintain current standards of living.

Organic Food: is food produced using ecological method of agricultural production that respects the natural environment.

Peak Oil: is the point of maximum oil production on earth.

Post-Oil: the futuristic idea when society no longer relies on oil for the production of energy or consumer products.

Production: use of energy to transform the natural resources into final products to be consumed.

sustainable society
terms

Progressive economics: is economic policy that believes that the best way for a society to progress is for the government to provide for the basics in society thus creating a stronger and more productive work force. This will then allow for rapid progress in all aspect of society.

Social Capital: refers to the institutions, relationships and norms that shape the quality and quantity of society's social interactions.

Social Progress Index: begins by defining what it means to be a good society based around three dimensions. Basic needs for survival: food, water, shelter, safety. Foundations of Well-Being: education, information, health and sustainable environment. Opportunity: rights, freedom of choice, freedom from discrimination and access to the world's most advanced knowledge. Together, these 12 components form the Social Progress framework.

Social Services: are activities or programs offered to promote well-being of a group of individuals.

Sovereignty: the full right and power of a governing body to govern itself without interference from outside sources or bodies.

Stakeholder: a person, group or organization with an interest in a project.

Subsidy: is financial aid or support given to an economic sector generally with the aim to promote economic and social policy.

Sustainability: is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainable Society Index: integrates human, environmental and economic wellbeing as a means of determining how well a society is progressing.

References:

Changemaker. (n.d.) " Observations of a Changemaker" Retrieved from:
changemakerobs.wordpress.com/what-is-a-changemaker/

Environmentalist (n.d.). In Wikipedia. Retrieved November 21, 2015, from
en.wikipedia.org/wiki/Environmentalist

Subsidy (n.d.). In Wikipedia. Retrieved November 21, 2015, from
en.wikipedia.org/wiki/Subsidy

Stakeholder (n.d.). In Wikipedia. Retrieved November 21, 2015, from
en.wikipedia.org/wiki/Stakeholder

sustainable society
word search

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G Y E R P R D H C K V V S E A L C T L I
K O J J H E I D A V T Q I R J U O Z X Y
P V Y U F X S X I I O M S H J R N J J Q
R P I S D S P C D C N A V A X Y S O Z U
O X J U I Y O G E Q L F L E M P U R A O
G Q B K E H S I M T D R L O G V M G J G
R Q F E O E A F E T E O B A B X P A E B
E I S F P D L R K K O E L X T Q T N E P
S E Y O T I N O A J R O F V Q I I I H E
S N X D C A O M U U O Y R E C Y O C A A
T X X U T I E U T Z Z C P S R G N N P R
B D G I P G A L N D P A H U S Z O E P T
N G V T N S U L X P C R O V D A T Z I H
G E A A D C G S U O I C S N O C R F N W
V P H F I S C I M O N O C E J D A G E Q
U C W K B Q P S B C V M I O F P F W S G
S U S T A I N A B L E E M S T H Z O S H
L A C I G O L O C E X D P Y L I D Y I A
Y P B E T L T N I R P T O O F O T U D L
U P D V T C E R O A F H B Q N T F S I H
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sustainable
progress
culture
conscious

media
grassroot
democracy
economics

inflation
orgranic
alternative
footprint

consumption
oil
earth
happiness

social
disposal
ecological
changemaker

sustainable society
crossword

Across
1. person who protects the environment
2. ecologically based food production
3. different energy source than fossil fuels
4. alternative energy source from sun

Down
1. a greenhouse gas emission (2 words)
2. social equality
3. self government
4. locally supported idea
5. long term thinking
6. customs of a society
7. distance food travels to fork (2 words)
8. financially supported
9. field of trade and industry

addendum

ADDENDUM | Using Indicators to Understand Social Policy in Norway and Canada

overview

The use of GIS technology can help students visualize and better understand patterns and trends in spatial information.

Choosing fertility rates and tertiary educational rates to use as indicators of social development provides insight into the investment in education in both countries since 1971.

learning goal

- Using GIS, I will be able to describe and understand the patterns and trends in fertility rates in Canada and Norway between 1971 and 2011.
- Using GIS I will compare educational attainment with fertility rates in each country.

success criteria

- I will complete the GIS activity and analysis.
- I will use the analysis of the data to explain trends in social policy in each country.

Inquiry Questions

- What are the patterns in fertility rates in Norway and Canada in 1971?
- Is there a change to these patterns in 2011?
- Is there a relationship between fertility rates and level of education?

acquire

Canada Data Sources
Fertility Data
1971—publications.gc.ca/Collection/Statcan/91F0015M/91F0015MIE1996001.pdf
2011—www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/hlth85b-eng.htm

Highest Level of Educational Attainment Data—Tertiary
Note: The term 'Educational attainment' used in this document refers to the highest certificate, diploma or degree completed by a person. The portion of the population that completed each type of education noted is the portion that completed it as their highest certificate, diploma or degree. For the purpose of this inquiry it looks at tertiary education only (trades, certificates, diplomas and degrees).

www12.statcan.gc.ca/nhs-enm/2011/as-sa/fogs-spg/Pages/ProvinceSelector.cfm?lang=E&level=2

Norway Data Sources
Fertility Data
1971 and 2011—www.ssb.no/statistikkbanken/selecttable/hovedtabellHjem.asp?KortNavnWeb=fodte&CMSSubjectArea=befolkning&PLanguage=1&checked=true

Tertiary Education

Note: This data refers to persons aged 16 and over who completed higher education courses either up to four years or longer than four years in duration. It excludes people with unknown or no completed education. It also includes intermediate level courses based on completed upper secondary level, but which are not accredited as tertiary education.

www.ssb.no/statistikkbanken/selecttable/hovedtabellHjem.asp?KortNavnWeb=utniv&CMSSubjectArea=utdanning&PLanguage=1&checked=true

explore

Map 1: Fertility rates in Canada by region, 1971

This map displays fertility rates for each province and territory in 1971.

What are the patterns on this map? Be sure to use proper geographic terminology when describing what you see (such as north, south, east, west, region names, province names, county names, where are the dark regions, where are the lighter ones etc.).

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Map 2: Fertility Rates in Canada by Region, 2011

This map displays fertility rates by province and territory in 2011.

What are the patterns on this map? Be sure to use proper geographic terminology when describing what you see.

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Map 3: Fertility Rates in Norway by Region, 1971

This map displays fertility rates by county in 1971. What are the patterns on this map? Be sure to use proper geographic terminology when describing what you see.

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Map 4: Fertility Rates in Norway by Region, 2011

This map displays fertility rates by county in 2011. What are the patterns on this map? Be sure to use proper geographic terminology when describing what you see.

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Map 5: Educational Attainment (tertiary) in Canada by Region, 2011

This map displays educational attainment by province and territory in 2011. What are the patterns on this map? Be sure to use proper geographic terminology when describing what you see.

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Map 6: Tertiary Graduation Rates in Norway by Region, 2011

This map displays tertiary education graduation rates by county in 2011. What are the patterns on this map? Be sure to use proper geographic terminology when describing what you see.

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analyze

1. Is there a change to fertility rates between 1971 and 2011 in Canada? Which regions show the greatest change? Be sure to use province and territory names in your answer, and provide evidence from the data to support your ideas.

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2. Is there a change to fertility rates between 1971 and 2011 in Norway? Which regions show the greatest change? Be sure to use county names in your answer, and provide evidence from the data to support your ideas.

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3. Compare Norway's fertility rate map from 2011 with the tertiary education map for Norway. What similarities and differences exist between the patterns on these two maps?

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4. Compare Norway's fertility rate map from 2011 with the tertiary education map for Norway. What similarities and differences exist between the patterns on these two maps?

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5. Based on your answers to questions #3 and #4, is there a relationship between fertility rate and level of education? If so, state the nature of this relationship.

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6. What trends exist when comparing the data for the northern regions with that of southern regions in both countries? Can you draw any conclusions about policy in each country based on the data you have analyzed? Be sure to describe each country separately.

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Note to teachers

If you want your students to create a layout in order to print comparison maps they will need to place each map layer into a new Data Frame. Those instructions are included at the end and would need to be added to the beginning of each new map section.

Follow the steps for creating a series of maps using ArcGIS (version 10.2). These maps will help you see patterns and trends related to the total fertility and educational attainment in Canada and Norway.

1. Canada
- Open *ArcMap*.
- Select A New *Empty Map* and click *Okay*
- Find and click the *Add Data* button in the tool bar (image of a black plus sign)
- Connect to the data folder on the Shared drive
- Go to the data directory, double-click *NorthSouth.gdb* then click *canadadata*, then *Add*

To Display Fertility Rate 1971...
- Right click *canadadata* in the *Layers* menu
- Choose *Properties*
- Choose the *Symbology* tab
- In the *Show* window, choose *Quantities* and then *Graduated Colours*
- Under *Value Field*, use the drop down arrow and choose *totfert71*

To display the fertility data in a way that allows us to understand the levels, you need to re-classify the data. To reclassify...
- Make sure you are still in the *Symbology* tab
- Under *Classification*, change *Classes* to 4
- Click the *Classify* button
- To set more usable classes, under Range, click once on the numbers beside each coloured symbol and type (this will set the end value for each range):

  2.00
  2.50
  3.00
  Leave the final class at 4.50

- Reduce the decimal places on the labels by clicking once on the 'Label' heading (to the right of the Range heading) then choosing 2 under 'Rounding'
- Click *Okay*
- Rename the map layer *canadadata* to Canada Total Fertility 1971. To do this click (in the Table of Contents) on the name once to highlight it and then once to allow you to rename it
- Rename the totfert71 filename (underneath) to By Region: # children per woman

This map displays total fertility by province or territory for 1971 in Canada.

Before proceeding, describe the patterns on this map using the space provided under **Map 1: Fertility Rates in Canada by Region, 1971**

To Display Fertility Rate 2011…
- Add the *canadadata* layer again to the map
- Right click *canadadata* in the *Layers* menu
- Choose *Properties*
- Choose the *Symbology* tab
- In the *Show* window, choose *Quantities* and then *Graduated Colours*
- Under *Value Field*, use the drop down arrow and choose *totfert11*

To display the fertility data in a way that allows us to understand the levels, you need to re-classify the data. To reclassify…
- Make sure you are still in the *Symbology* tab
- Under *Classification*, change *Classes* to 4
- Click the *Classify* button
- To set more usable classes, under Range, click once on the numbers beside each coloured symbol and type (this will set the end value for each range):

  1.85
  1.90
  1.95
  Leave the final class at 2.97

- Reduce the decimal places on the labels by clicking once on the 'Label' heading (to the right of the Range heading) then choosing 2 under 'Rounding'
- Click *Okay*
- Rename the map layer *canadadata* to Canada Total Fertility 2011. To do this click on the name once (in the Table of Contents) to highlight it and then once to allow you to rename it
- Rename the totfert11 filename (underneath) to By County: # children per woman

This map displays total fertility by province or territory for 2011 in Canada.

Before proceeding, describe the patterns on this map using the space provided under **Map 2: Fertility Rates in Canada by Region, 2011**

2. Norway
- Find and click the *Add Data* button in the tool bar (image of a black plus sign)
- Connect to the data folder on the Shared drive
- Go to the data directory, double-click *NorthSouth.gdb* then click *norwaydata*, then *Add*

To Display Fertility Rate 1971…
- Right click *norwaydata* in the *Layers* menu
- Choose *Properties*
- Choose the *Symbology* tab
- In the *Show* window, choose *Quantities* and then *Graduated Colours*
- Under *Value Field*, use the drop down arrow and choose *totfert71*

To display the fertility data in a way that allows us to understand the levels, you need to re-classify the data. To reclassify…
- Make sure you are still in the *Symbology* tab
- Under *Classification*, change *Classes* to 4
- Click the *Classify* button
- To set more usable classes, under Range, click once on the numbers beside each coloured symbol and type (this will set the end value for each range):

  2.00
  2.50
  3.00
  Leave the final class at 3.21

- Reduce the decimal places on the labels by clicking once on the 'Label' heading (to the right of the Range heading) then choosing 2 under 'Rounding'
- Click *Okay*
- Rename the map layer *norwaydata* to Norway Total Fertility 1971. To do this click (in the Table of Contents) on the name once to highlight it and then once to allow you to rename it
- Rename the *totfert71* filename (underneath) to By County: # children per woman

This map displays total fertility by county for 1971 in Norway.

Before proceeding, describe the patterns on this map using the space provided under **Map 3: Fertility Rates in Norway by Region, 1971**

To Display Fertility Rate 2011…
- Add the *norwaydata* layer again to the map
- Right click *norwaydata* in the *Layers* menu
- Choose *Properties*
- Choose the *Symbology* tab
- In the *Show* window, choose *Quantities* and then *Graduated Colours*
- Under *Value Field*, use the drop down arrow and choose *totfert11*

To display the fertility data in a way that allows us to understand the levels, you need to re-classify the data. To reclassify…
- Make sure you are still in the *Symbology* tab
- Under *Classification*, change *Classes* to 4
- Click the *Classify* button
- To set more usable classes, under Range, click once on the numbers beside each coloured symbol and type (this will set the end value for each range):

  1.85
  1.90
  1.95
  Leave the final class at 2.09

- Reduce the decimal places on the labels by clicking once on the 'Label' heading (to the right of the Range heading) then choosing 2 under 'Rounding'
- Click *Okay*
- Rename the map layer *norwaydata* to Norway Total Fertility 2011. To do this click on the name once (in the Table of Contents) to highlight it and then once to allow you to rename it
- Rename the *totfert11* filename (underneath) to By County: # children per woman

This map displays total fertility by county for 2011 in Norway.

Before proceeding, describe the patterns on this map using the space provided under **Map 4: Fertility Rates in Norway by Region, 2011.**

Education Levels Canada
To Display Educational Attainment in Canada…
- Add the *canadadata* layer again to the map
- Right click *canadadata* in the *Layers* menu
- Choose *Properties*
- Choose the *Symbology* tab
- In the *Show* window, choose *Quantities* and then *Graduated Colours*
- Under *Value Field*, use the drop down arrow and choose *pctter2011*

To display the fertility data in a way that allows us to understand the levels, you need to re-classify the data.
To reclassify…
- Make sure you are still in the *Symbology* tab
- Under *Classification*, change *Classes* to 4
- Click the *Classify* button
- To set more usable classes, under Range, click once on the numbers beside each coloured symbol and type (this will set the end value for each range):

  50
  55
  60
  Leave the final class at 65.19

- Reduce the decimal places on the labels by clicking once on the 'Label' heading (to the right of the Range heading) then choosing 2 under 'Rounding'
- Click *Okay*
- Rename the map layer *canadadata* to Canada Tertiary Education 2011. To do this click on the name (in the Table of Contents) once to highlight it and then once to allow you to rename it
- Rename the pctter11 filename (underneath) to By Region: percent of population

This map displays tertiary education attainment by province and territory for 2011 in Canada.

Before proceeding, describe the patterns on this map using the space provided under **Map 5: Tertiary Education Attainment in Canada by Region, 2011.**

Education Levels Norway

To Display Educational Attainment in Norway…
- Add the *norwaydata* layer again to the map
- Right click *norwaydata* in the *Layers* menu
- Choose *Properties*
- Choose the *Symbology* tab
- In the *Show* window, choose *Quantities* and then *Graduated Colours*
- Under *Value Field*, use the drop down arrow and choose *pctter2011*

To display the fertility data in a way that allows us to understand the levels, you need to re-classify the data. To reclassify…
- Make sure you are still in the *Symbology* tab
- Under *Classification*, change *Classes* to 4
- Click the *Classify* button
- To set more usable classes, under Range, click once on the numbers beside each coloured symbol and type (this will set the end value for each range):

  23
  28
  35
  Leave the final class at 45.6

- Reduce the decimal places on the labels by clicking once on the 'Label' heading (to the right of the Range heading) then choosing 2 under 'Rounding'
- Click *Okay*
- Rename the map layer *norwaydata* to Norway Tertiary Education 2011. To do this click (in the Table of Contents) on the name once to highlight it and then once to allow you to rename it
- Rename the pctter11 filename (underneath) to By County: percent of population

This map displays tertiary education percentages by county for 2011 in Norway.

Before proceeding, describe the patterns on this map using the space provided under **Map 6: Tertiary Education in Norway by County, 2011.**

To produce a printable map

Adding a Data Frame—this needs to be done as a first step prior to adding data for each of the 6 maps.
- From the Insert menu, choose Data Frame (a new data frame will appear in the Table of Contents)
- Highlight the New Data Frame by clicking on it once
- Find and click the Add Data button in the tool bar (image of a black plus sign)

Building a printable map
- At the bottom of the Data View there are two buttons. Find the one that says Layout View and click it
- All 6 data frames will appear on the map. Choose the two you would like to compare and delete the rest
- Resize the data frames to fit the layout page. You can do this by using the 'handles' that appear when you click on a data frame
- If you want the data (the layer) to fill the data frame click inside the data frame then click the globe (Zoom Full Extents) at the top of the page
- To add map components (Legend, Title, North Arrow etc.) use the Insert menu at the top of the window and add them one at a time
- Adding a legend uses a wizard—accept all defaults but remove the Legend Title and make the frame background white
- Adjust each map component by double-clicking it to select from available options. Place them in an appropriate spot on the map by clicking once and dragging
- Create a title and place your name and the date in a bottom corner
- Click File—Export to save your map as a .pdf for printing