

THE MONOGRAPH

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Plan to Attend:
2019 OAGEE Fall Conference
Ottawa
November 8 & 9, 2019
Details on pages 3-6 of this issue



Changing Your Address?

Special Note: Don't forget to forward any change of address to **O.A.G.E.E. c/o Becker Associates, 10 Morrow Avenue, Suite 202, Toronto, ON M6R 2J1**. This applies particularly to pre-service student members. This will ensure that you receive a full annual set of issues of *The Monograph*.



The Monograph is printed on recycled paper as an indicator of our organization's interest in protecting the environment.

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President's Message

Ewan Geddes, Toronto District School Board

Some of you may be getting ready to do some prep work for another school year. While you do so, remember that OAGEE is available to support as you move forward in your education career.

There have been many changes in Ontario education this year - the cancellation of phase two of the Canadian and World Studies (CWS) curriculum revision that was to have Indigenized the curriculum, cuts impacting how many and which Geography courses will be available for students to enroll in, and realignment of Geography's position within their instructional frameworks to mention just a few.

The government's cancellation of phase 2 of CWS revision has taken place alongside the introduction of the revised First Nations, Métis and Inuit Studies grade 11 and 12 curriculum comprised entirely of elective courses. Where the Indigenization of the CWS curriculum as a whole would have integrated the Indigenous perspective and views with an authentic influence on the curriculum, the new FNMI document will help support teachers delivering these select few courses and may also help teachers wanting to bring more Indigenous content into their own teaching. This is not an ideal situation as there will be much less consistency across the provinces as to what and how much Indigenous learning is actually taking place. Where does this leave Indigenous teaching in the Geography curriculum? The front matter of the FNMI document should provide some direction for CWS courses, and teachers should continue their own professional learning. Many boards are also providing PD on Indigenizing and decolonizing the curriculum. Teachers can also reach out to Indigenous elders and traditional knowledge keepers for their expertise and perspective.

On top of curriculum revision many senior Geography courses do not seem to be running as they have done in the past in parts of the province. Some Boards, including the province's largest, the TDSB, have moved away from a central Geography and Social Science instructional leadership role to one that puts these curriculum areas under the direction of ESL. Geography teachers in boards across the province are experiencing similar restructuring. While ESL numbers have certainly increased throughout the province, the need for geographic education has also increased. Geography helps people not only to ask What is where? Why there? Why care? but also to understand our world as it is now and into the future. Geography teaches students about issues, how to understand them, and then supports them to develop plans to solve the problems. Geography helps people understand some of the world's biggest challenges, like the uptick in the number of migrants in search of refuge and our decades-old climate crisis. Furthermore, using the Geographic Perspective (Social, Economical, Environmental, and Political Perspective) to make sense of proposed projects like Smart City T.O. will allow students to better understand the actual impacts such a project could have, locally, nationally, and globally. To quote Penn State's Geospatial Revolution, the changing world we face "has made Geography ordinary". Geography needs to be put on the map again.



How can the relevance of Geography be shown as we all know it should be? To answer this question, OAGEE is in the process of making current and relevant materials available to its members to take up the slack that the boards have created to deal with the cuts imposed on them. As part of this process, we are revamping our website to reach out to other stakeholders such as Can Geo Ed who support Geography.

On this note I, as President of OAGEE, am reaching out to members for suggestions. How might OAGEE support you in your teaching as the cuts to education start to be felt in September? How might fellow members support each other across the province?

It isn't all doom and gloom, though. Excellent work is being done to make students excited about Geography. The first annual OAGEE/Can Geo Ed/ESRI Story Map competition was a great success. The top three maps and top two notable maps are attached for your exploration. There is potential for this competition to grow in the future. I would encourage more teachers to get involved by submitting a few examples of student work to help build the contest.

I hope everyone has a relaxing summer and comes back rejuvenated in September.

Top Three Story Map Entries:

- 1 **Carpooling** - Lindsay Warner & Lexi Haslam - Eden High School, District School Board of Niagara - lindsay.warner@dsbn.org <http://arcg.is/1CTWyz>
- 2 **Canadian Animal Species** - Ewan Geddes & Bill Jiang, York Mills Collegiate Institute, Toronto District School Board - ewan.geddes@tdsb.on.ca - <https://tdsbgeo.maps.arcgis.com/apps/MapJournal/index.html?appid=bc866a3370c341dabab5ced0da987892&edit>
- 3 **Canada's Aging Population** - Andrew White & Charlotte Fritz - Eden High School, District School Board of Niagara - rew.white@dsbn.org; <http://arcg.is/Of9uH>

Top Two Story Map Notables:

- 4 **Overfishing** - Ewan Geddes & Bill Jiang - York Mills Collegiate Institute, Toronto District School Board - ewan.geddes@tdsb.on.ca <https://tdsbgeo.maps.arcgis.com/apps/MapJournal/index.html?appid=59babe47becc492a956a4b6fdb0a8ef2>
- 5 **CBC Aboriginal Murdered and Missing** - Ewan Geddes & Katherine Liu, York Mills Collegiate Institute, TDSB - ewan.geddes@tdsb.on.ca; <https://arcg.is/n059m>

OAGEE Fall Conference 2019

Ashbury College - Ottawa, ON

"Geography: A Natural Advantage"

"Water at the confluence of unification and division"

Friday, Nov. 8 & Saturday, Nov. 9 2019



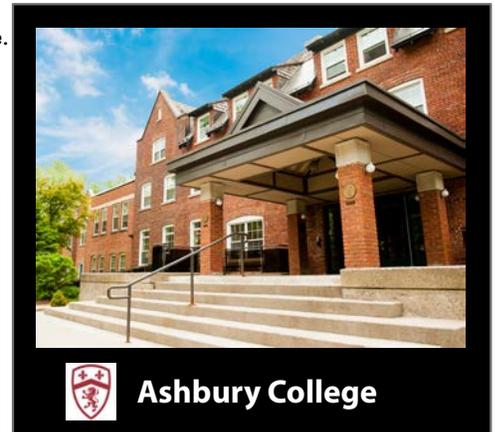
Come and explore the Ottawa-Gatineau Region.
Discover our fantastic Geography and the natural advantages of our waterways.
At the confluence of three important rivers, two major physiographic regions meet here.
Located on an ancient sea bed, it is now fashioned by the Ottawa River and its watershed, straddling two great provinces.
For over 5000 years, Indigenous hunters and traders, followed by the French and the English, visited and inhabited its banks.
Explorers, such as Brûlé and Champlain, mapped the region.



Join us on the Friday Evening Social event at the Centre for Geography and Exploration



Meet Cory Trépanier, a well known Canadian Painter, Filmmaker and Explorer. Cory's oil paintings and passionate films are conceived through extensive exploration into some of the most wild places on our planet.



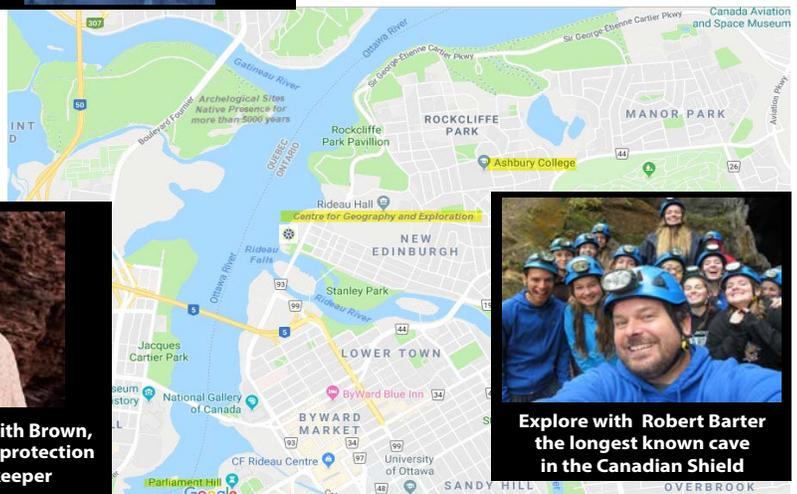
Ashbury College

Over 40 workshops and Field Trips for Grade 7-12 include sessions on:

Geospatial Technology & Mapping Based Learning, Natural Hazards, Water Protection, French Resources, Field Studies, Ecological & Sustainability Awareness, Geo-literacy & Numeracy, geoSTEM, Game-based Learning, Inquiry-based Learning, Indigenous Issues, Global Citizenship, Concepts of Geographic Thinking, International Trips, Urbanism & Transportation, Assessment & Evaluation, Differentiated Learning, Cumulating Tasks, Classroom Strategies, Resources & Lessons Sharing.



Come and listen to Meredith Brown, a champion for freshwater protection and founder of Riverkeeper



Explore with Robert Barter the longest known cave in the Canadian Shield

You are invited to the Region #10 Ottawa-Carleton-Renfrew OAGEE's Fall Conference to be held at Ashbury College in Ottawa, Ontario.

For updates, visit the Conference section of the OAGEE website (www.oagee.org).

Workshop / presentation proposals and participant registration will also be available through the Conference website (May 23 to July 31, 2019)

General Inquiries - CONFERENCE COORDINATORS

Claude Tremblay Brun del Re (claudebdr@live.ca)

Conference Chair and Représentante francophone pour l'AECEO

Anjélien Slater Conference Co-Chair (anjelien.slater@ashbury.ca)

Brian Beard - Region #10 Councillor (brian.beard@ocdsb.ca)



OAGEE Fall Conference 2019



"Geography: A Natural Advantage"

"Water at the confluence of unification and division"

Ashbury College - Ottawa, ON / Friday, Nov. 8 & Saturday, Nov. 9 2019



OPENING WORDS OF WISDOM

Verna McGregor is from the First Nation Algonquin Community of Kitigan Zibi Anishinabeg which is approximately 120 kilometres north of Ottawa, Ontario. Ottawa and Gatineau form part of the Algonquin Nation's traditional unceded lands.

Verna has remained firmly grounded in her community and nation by being part of also the group of traditional Grandmothers (Kokomisag) and Elders. This includes the importance of promotion of retention of the Algonquin language and culture which is so important when addressing issues from a cultural perspective.



FRIDAY MORNING SPEAKER

Meredith Brown, a champion for freshwater protection, is widely known throughout the vast Ottawa River Watershed as the founding Riverkeeper and former leader of the charitable organization Ottawa Riverkeeper, a licensed member of Waterkeeper Alliance.

Meredith holds degrees in biology, environmental engineering and resource and environmental management. Meredith is a Fellow of the Royal Canadian Geographical Society and was awarded the Nature Inspiration Award from the Canadian Museum of Nature.

Over the past 15 years, Meredith has significantly raised the profile of the Ottawa River and brought important issues such as sewage dumping, fish migration, nuclear waste and microplastic pollution to the attention of the public and decision-makers.

Meredith continues to work with Waterkeepers to increase water literacy throughout Canada and help build community-based monitoring networks.



CORY TREPANIER

Artist / Filmmaker / Explorer

FRIDAY EVENING AT THE CENTRE FOR GEOGRAPHY AND EXPLORATION

Trépanier's oil paintings and passionate films are conceived through extensive exploration into some of the most wild places on our planet.

His artistic expeditions have led him to tackle challenges few encounter, including a knee-punishing trek on Ellesmere Island with a 120lb backpack; enduring ravaging hordes of mosquitoes while painting at the edge of one of the highest waterfalls in the world above the Arctic Circle; being surrounded by Arctic wolves; canoeing around an iceberg with his easel to capture it from a unique point of view; and depicting Mount Logan, Canada's highest mountain, from the Kluane ice fields at 3,000 m (10,000 ft)... all for the sake of his art.

In 2001, Trépanier first began filming his expeditions, leading to five documentaries: *A Painter's Odyssey*, *Into the Arctic*, *Into the Arctic II* (nominated for a Canadian Screen Award) and *TrueWild: Kluane*. His fifth film, *Into the Arctic: Awakening*, had its first public screening in Monaco before Prince Albert II.

INTO THE ARCTIC EXHIBITION TOUR

In January of 2017, Trépanier's INTO THE ARCTIC Exhibition - an unprecedented collection of over 60 canvases and 3 films from his INTO THE ARCTIC project - began touring for 4 years, with 12 museums on the itinerary to date. Created from over a decade of painting and exploring the Canadian North, it premiered at the Embassy of Canada in Washington D.C. In 2018, it's Canadian premiere was in Vancouver. In 2020, the collection will travel overseas for a European premiere in Monaco. Highlighting the collection is the 15 foot wide (4.6 m) *Great Glacier*, quite possibly the largest Arctic landscape painting in Canada's history.

Trépanier has been featured in media around the globe, and his documentaries broadcast internationally, sharing his passion for the wild places that he explores and paints. Through his unique vision, expressed through art, films, public speaking, online media, and a forthcoming coffee table book in 2020, Cory inspires others to a deeper appreciation of our planet.

Canadian Geographic named Trépanier one of Canada's Top 100 Living Explorers. He is a fellow of the Royal Canadian Geographical Society and a member of The Explorers Club, receiving the Canadian Chapters' highest award, the Stefansson Medal. He is National Champion of the Great Trail.

Trépanier's Fine Art: www.trepanieroriginals.com
Into The Arctic Project: www.intotheartctic.ca

Trépanier Originals, 16662 The Gore Road, Caledon, ON, L7C 3E7
(905) 880-2029 | ois@trepanieroriginals.com



Congrès d'automne 2019 de l'AE GEO

Ashbury College - Ottawa, ON

"Les atouts de la géographie"

"L'eau au confluent de l'unification et de la division"

Vendredi 8 et samedi 9 novembre 2019



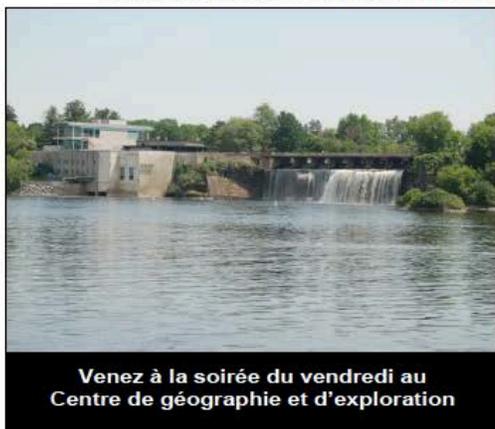
Venez explorer la région d'Ottawa-Gatineau.
Découvrez notre fantastique géographie et les avantages naturels de nos voies navigables.

Au confluent de trois rivières importantes, deux régions physiographiques se rencontrent ici.

Située sur un ancien fond marin, la vallée est maintenant façonnée par la rivière des Outaouais et son bassin versant, chevauchant deux grandes provinces.

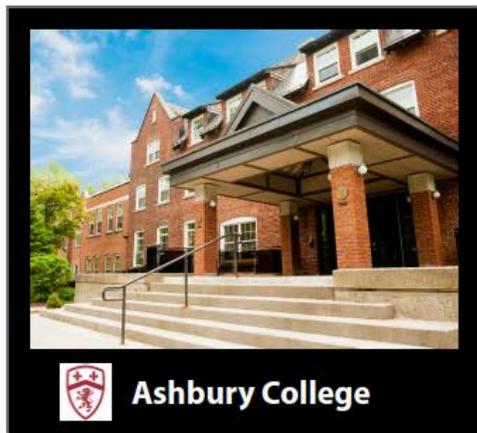
Depuis plus de 5000 ans, les chasseurs et les commerçants autochtones, suivi des Français et des Anglais, ont visité et habité ses rives.

Des explorateurs, comme Brûlé et Champlain, ont cartographié la région.



Venez à la soirée du vendredi au Centre de géographie et d'exploration

Venez rencontrer Cory Trépanier, un peintre, un cinéaste et un explorateur. Les expéditions hors des sentiers battus de Cory vous feront découvrir des lieux sauvages qu'il dépeint à merveille dans ses peintures à l'huile et dans ses films.



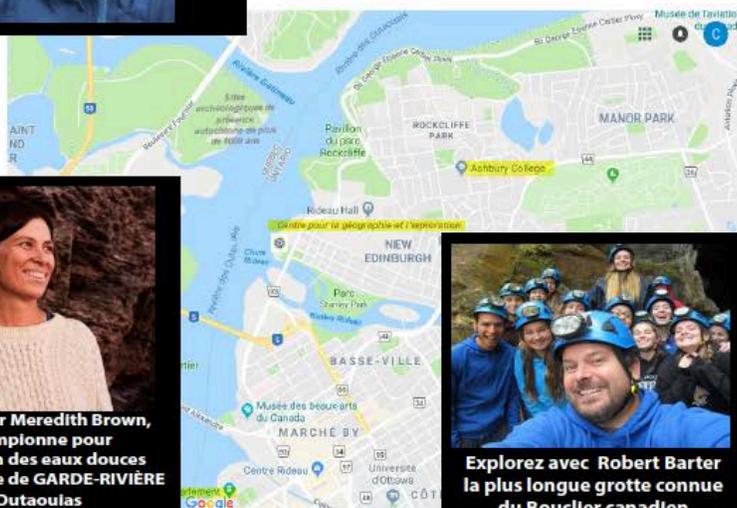
Ashbury College

Nous vous offrons plus de 40 ateliers ou communications et des excursions sur le terrain du primaire à la 12e sur ces thèmes:

Les ressources en langue française pour l'immersion, les cours de géographie en langue première, les géotechnologies et l'apprentissage par les cartes, GéoSTEM, les catastrophes naturelles, la protection de l'eau, les études de terrain, les voyages internationaux, les enjeux des Premières Nations, des Métis et des Inuits, les concepts de la pensée critique, l'apprentissage par le jeu, la géolittératie et la géonumératie, la promotion de la conscience écologique et de l'environnement, les études urbaines et le transport, le rendement et l'évaluation, la justice sociale et l'éducation à la citoyenneté, l'apprentissage par l'enquête, la différenciation pédagogique dans la classe de géographie, les tâches sommatives, le partage de ressources, de leçons et de stratégies pour la salle de classe.



Venez écouter Meredith Brown, une championne pour la protection des eaux douces et la fondatrice de GARDE-RIVIÈRE de l'Outaouais



Explorez avec Robert Barter la plus longue grotte connue du Bouclier canadien

La région #10 Ottawa-Carleton-Renfrew est heureuse de vous inviter au Congrès d'automne 2019 de l'AE GEO qui se tiendra au Ashbury College à Ottawa les vendredi 8 et samedi 9 novembre 2019.

Les mises à jour sur le congrès seront affichées sur le site web de l'AE GEO (www.oagee.org/fr) dans la section web Congrès d'automne 2019. L'inscription au congrès se fait en ligne.

L'appel d'ateliers ou de communications sera affiché sur le site web du 23 mai au 31 juillet 2019.

Pour de plus amples informations, veuillez contacter les coordinateurs du congrès

Claude Tremblay Brun del Re (claudedr@live.ca) Présidente du congrès et représentante francophone (AE GEO)

Anjélien Slater Co-présidente du congrès (anjelien.slater@ashbury.ca)

Brian Beard - Conseiller pour la région 10 (brian.beard@ocdsb.ca)



"Les atouts de la géographie"

"L'eau au confluent de l'unification et de la division"

Ashbury College - Ottawa, ON / Vendredi 8 et samedi, 9 novembre 2019



SAGES PAROLES DE BIENVENUE

Verna McGregor est originaire de la communauté algonquine des Premières nations Kitigan Zibi Anishnabeg, située à environ 120 km au nord d'Ottawa en Ontario. Les villes d'Ottawa et de Gatineau font partie des terres ancestrales algonquines non cédées.

Verna est restée fermement ancrée dans sa communauté et à la nation algonquine. Elle fait également partie du groupe des grands-mères traditionnelles (Kokomisag) et des aînés. Elle reconnaît l'importance de promouvoir et de préserver la langue et la culture algonquines, car cela s'avère d'une importance vitale pour aborder les problèmes d'un point de vue culturel.



CONFÉRENCIÈRE DU VENDREDI MATIN

Meredith Brown est une championne de la protection des eaux douces. Dans le vaste bassin versant de la rivière des Outaouais, Meredith est connue en tant que fondatrice et l'ancienne directrice de l'organisme à but non lucratif GARDE-RIVIÈRE des Outaouais. Elle est aussi membre agréée de *Waterkeeper Alliance*.

Meredith est titulaire de diplômes en biologie, en génie de l'environnement et en gestion des ressources et de l'environnement. Elle est *Fellow* de la *Société géographique royale du Canada* et a reçu le prix *Inspiration Nature* du *Musée canadien de la nature*.

Au cours des 15 dernières années, Meredith a considérablement rehaussé le profil de la rivière des Outaouais et a attiré l'attention du public, des dirigeants et des décideurs sur des questions importantes telles que le rejet des eaux usées, la migration du poisson, les déchets nucléaires et la pollution microplastique.

Meredith continue de travailler avec *Waterkeeper* pour accroître les connaissances sur l'eau partout au Canada et aider à mettre en place des réseaux communautaires de surveillance des cours d'eau.



VENDREDI SOIR AU CENTRE DE GÉOGRAPHIE ET EXPLORATION

CORY TREPANIER

Artiste / Cinéaste / Explorateur

Les expéditions hors des sentiers battus de Cory nous font découvrir des lieux sauvages d'une incroyable beauté qu'il peint à merveille avec passion dans ses peintures à l'huile et dans ses films.

Ses expéditions artistiques ont amené Cory à affronter de nombreux défis peu communs, dont en voici quelques-uns. Cory a fait une randonnée ardue sur l'île d'Esmeralda avec un sac à dos de plus de 120 lb sur ses épaules, ce qui a abîmé ses genoux. Au Nord du cercle arctique, Cory endure des nuées de moustiques qui l'assaillent alors qu'il peint au bord d'une des plus hautes cascades du monde. Il s'est aussi retrouvé entouré de loups arctiques. Chevalet en main, il fait du canoë autour d'un iceberg afin d'en capturer un point de vue unique. À plus de 3000 mètres (10000 pieds), il peint le mont Logan, la plus haute montagne du Canada, à partir des champs de glace du Kiluane... et tout cela pour le plaisir de son art.

En 2001, Cory a commencé à filmer ses expéditions, ce qui l'a conduit à créer cinq documentaires : *A Painter's Odyssey* (L'odyssée d'un peintre), *Into the Arctic* (Au cœur de l'Arctique), *Into the Arctic II* (Au cœur de l'Arctique II) celui-ci a été en nomination pour le prix Écrans canadiens et *TrueWild : Kluane* (Terres sauvages - Kluane). Son cinquième film, *Into the Arctic : Awakening* (Un temps d'éveil au cœur de l'Arctique) a été projeté pour la première fois à Monaco devant le Prince Albert II.

LA TOURNÉE DE L'EXPOSITION AU CŒUR DE L'ARCTIQUE

En janvier 2017, l'exposition AU CŒUR DE L'ARCTIQUE de Cory, une collection sans précédent de plus de 60 toiles et 3 longs métrages de ses expéditions dans des régions éloignées de l'Arctique, a débuté une tournée de 4 ans avec à l'horizon plus de 100 musées. Grâce à plus de 10 ans d'expérience de peintures et d'expéditions dans le Nord canadien, cette exposition a été inaugurée à l'ambassade du Canada à Washington DC. En 2018, la première canadienne a eu lieu à Vancouver. En 2019, la collection voyagea à l'étranger pour une première européenne à Monaco. L'exposition se distingue par la pièce maîtresse de 16 pieds (1,7 m x 4,6 m) de largeur qui est probablement le plus grand tableau de l'histoire du Canada d'un paysage arctique.

Cory a été présenté dans les médias du monde entier et ses documentaires ont été diffusés à l'échelle internationale afin de partager sa passion pour les lieux sauvages qu'il explore et peint. Grâce à sa vision unique, exprimée à travers l'art, les films, la prise de parole en tant que conférencier, les médias en ligne et la production d'un livre illustré grand format en 2020, Cory inspire les gens à mieux apprécier notre planète.

Le magazine *Canadian Geographic* a désigné Cory Trépanier comme l'un des 100 plus grands explorateurs vivants du Canada. Il a été nommé *Fellow* de la *Société géographique royale du Canada* et *The Explorers Club Canadian Chapter* (le Club des explorateurs) lui a décerné la prestigieuse médaille Stefansson. Il est aussi un champion national du Grand Sentier.

Beaux-arts de Trépanier : www.trepanieroriginals.com
Projet Into The Arctic : www.intothearctic.ca

Trépanier Originals, 16662 The Gore Road, Caledon, ON, L7C 3E7
(905) 880-2029 | oits@trepanieroriginals.com





BUILDING INQUIRY

by Randy Wilkie, Lakehead University, Geograf/x design

The Bubbles

Bubbles is a teaching strategy that develops questions for an inquiry. With a current *Topic* (e.g. Nuclear Energy), GEOBubbles frame inquiry questions using an infographic (see *Going Nuclear* worksheets). Linked to curriculum expectations, these inquiry questions form the basis of the **BIG Question** of an in-depth inquiry.

The Objectives of GEOBubbles

- To have students *think critically* about current issues
- To elevate the *quality and complexity* of a classroom inquiry(s) by developing appropriate questions
- To develop *reasoned judgments* through *higher order thinking*
- To enable teachers and/or students to *assess the merits* of inquiry questions and the *BIG Question*

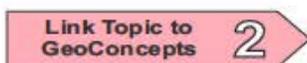
The Bubble Process

Geography Bubbles (**GEOBubbles**) use *Bloom's Taxonomy*, to have teacher and/or students turn *trigger words* into higher-order thinking inquiry questions.



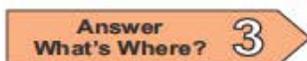
Bubble Steps

1. Start with a *Topic* #1 (e.g. from a mandated curriculum, such as the *Ontario Ministry of Education, Canada and World Studies*).



2. Link the Topic to the geographical concept(s) which should underpin the thinking and learning. Each *GEOConcept* (e.g. *Geographic Perspectives, Spatial Significance, Patterns and Trends, and Interrelationships*) should figure prominently when filling in the bubbles.

GEOConcepts vary with the educational jurisdiction. For example, Australia uses *Place, Space, Environment, Interconnection, Sustainability, Scale, and Change*. In the United Kingdom, it is *Place, Space, Scale, Interdependence, Physical and Human Environmental Interaction and Sustainable Development, and Cultural Understanding and Diversity*. New Zealand uses *Environments, Perspectives, Processes, Patterns, Interactions, Change and Sustainability*. In the United States, it is the *Five Themes of Geography: Location, Place, Interaction, Movement, and Region*.



3. Use **What's Where?** (#3) to spatially describe the location, distribution, pattern, region, ... and/or accessibility associated with the topic.

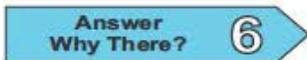


4. Use the *Trigger Words* (see *Trigger Words* page) to develop inquiry questions. An *infographic* worksheet (see *Going Nuclear*) can provide the basis for the *inquiry questions* (#4) which are inserted into the bubbles.

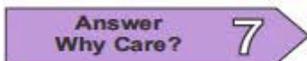
Teachers can use the infographic worksheet with the bubbles completed to set the example (see *Going Nuclear - Show Me* worksheet). Teachers can leave some bubbles blank to give students the opportunity to develop their own inquiry questions (see *Point Me* worksheet). The third approach (see *Let Me Go* worksheet) is to let the student(s) "have at it".



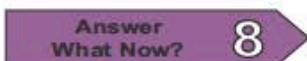
Note: Teachers can use the *Developing Inquiry Questions* and/or *Trigger Words* to assist students. See the following pages.



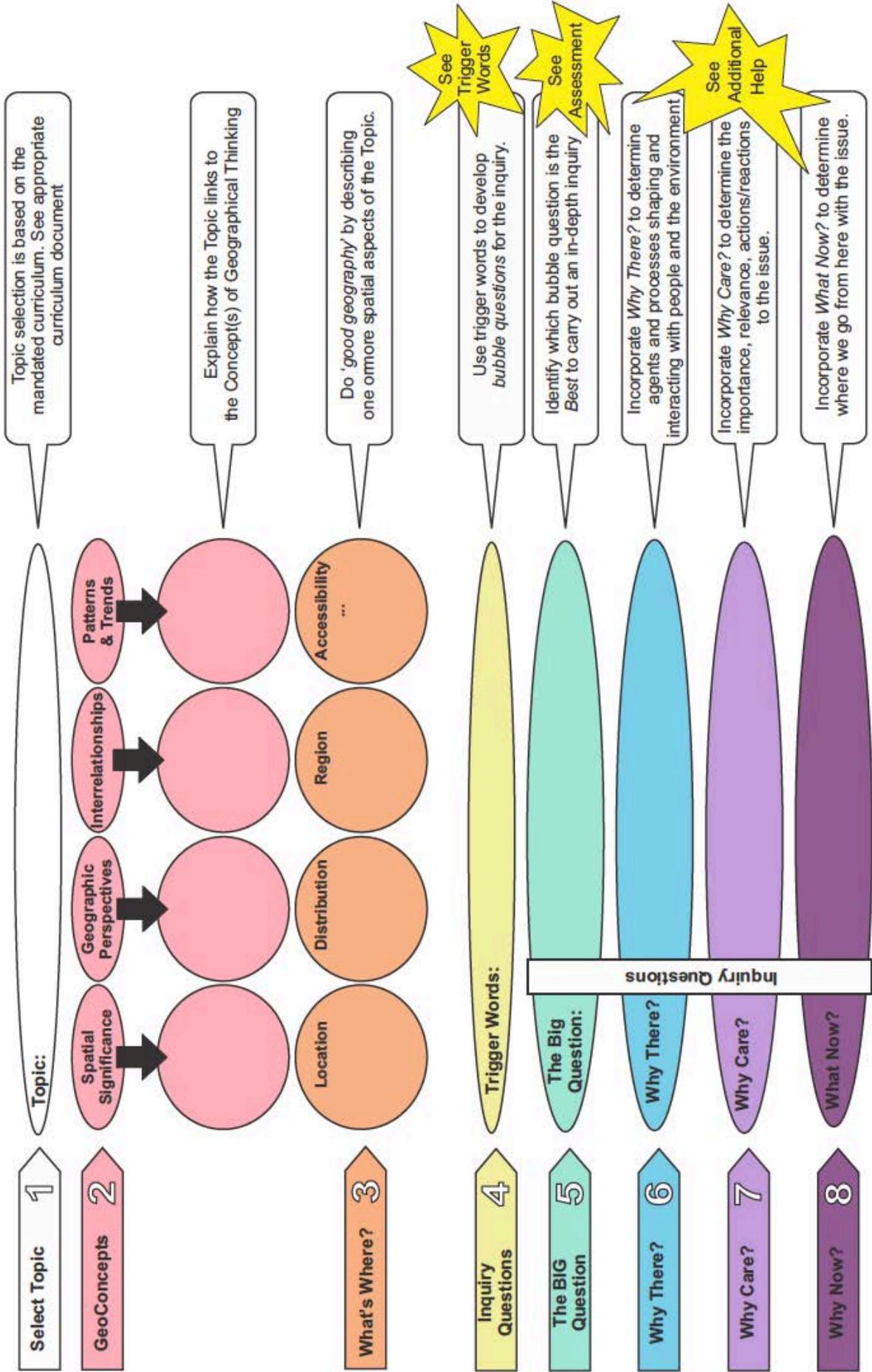
5. Carry out an in-depth **GEOInquiry** (#5) by determining which bubble question is the best for the **BIG Question**. Teachers and/or students can assess the inquiry questions (See *Assessment of the Inquiry Questions*) to get the best Q.



6. Students answer the **BIG Question** making sure to address **Why There?** #6, **Why Care?** #7, and **Whats Now?** (#8) in order to do 'good geography'.



Geo BUBBLES Developing Inquiry Questions





BUBBLES

Trigger Words

Inquiry Building

INQUIRY BUILDING	Potential Trigger Words for:			Possible Outcomes
Bloom's Taxonomy	Critical Thinking	GEOThinking	Assessment	
Knowledge (Remembering) Identify & recall information without understanding. Exhibit previously learned material (facts, concepts, ...) Students recall and/or recognize information	Choose Copy Define Duplicate Identify List Omit Quote	Read Recall Relate Remember Reproduce Select State Underline	What's Where? Find Identify Label Locate Observe Record Show	Matching Recognizing How What Who When Which Quiz Test Workbook Worksheet
Comprehension (Understanding) Find, organize, & select facts & ideas to demonstrate basic understanding of those facts, ideas, concepts, ... Students change information into a new form	Classify Contrast Demonstrate Explain Extend	Generalize Illustrate Interpret Review Summarize	Why There? Observe Record Show	Comparing Estimating Inferring Matching Predicting Summarizing Collection Quiz Test
Application (Applying) Use facts & ideas in a new situation. Solve problems by applying acquired knowledge (facts, concepts, ...) Students use knowledge and generalizations to solve problems	Apply Build Categorize Construct Choose Correlate Determine	Group Make Model Organize Plan Relate Simulate	Why There? Identify Illustrate	Associating Classifying Concluding Deducting Demonstrating Solving Demonstration Illustrations Journal
Analysis (Analyze) Separate a whole into component parts by identifying causes & making inferences to support generalizations Students separate info into component parts	Analyze Assume Categorize Classify Discriminate Dissect Group	Infer Isolate Justify Omit Rank Select Separate	Why Care? Cause & Effect Establish Infer Question	Attributing Deconstructing Integrating Justifying Motivating Structuring Abstract Checklist Report Survey
Synthesis (Evaluate) Create something to form a new whole or propose an alternative solution(s) Students use creative thinking to solve a problem	Adapt Change Collaborate Develop Extend Imagine Invent	Model Predict Revise Solve Speculate Transform	Why Care? What Now? Estimate Innovate Predict Solve	Appraising Arguing Collaborating Evaluating Innovating Judging Media Product Project Test
Evaluation (Creating) Develop & defend opinions, judgements, and/or decisions by validating ideas based on criteria Student makes qualitative and quantitative judgments	Appraise Conclude Convince Criticize Deduct Determine	Dis/Prove Grade Prove Recommend Support Validate	Why Care? What Now? Assess Conclude Convince	Arguing Assessing Attributing Defending Persuading Culminating Activity Examination

Bloom's provides a framework to focus on designing the BIG question(s) for an inquiry and the feedback on performance.

The role of students and the tasks needed to complete a geographical inquiry.

Trigger words for *critical thinking* reflect the level and type of question(s) that focus on the BIG Question(s). Students focus on the trigger to increase comprehension and problem solve.

The triggers to link an inquiry to geography and the BIG Question(s).

Triggers guides to determine and assess the level of critical thinking for the inquiry.

Examples of the strategies that can be used to assess the GEOInquiry.



Additional Help

Inquiry Building

Once a student has a **BIG Question**, the Inquiry can be framed using Blooms. The organizer below may help with structuring the Inquiry. The intent is to move the question and answer to reflect higher order thinking (i.e. explaining, justifying, defending, proposing, with facts and support).

Blooms Revision (after Anderson)	Create	Evaluate	Analyze	Apply	Understand	Remember
Triggers for critical thinking	Create	Rate	Compare	How	Explain	Recall
Develop critically thoughtful tasks	Design a NEW question	Justify an answer	Draw connections from ideas	Use info in NEW situations	Explain ideas	Recall facts
Triggers to develop reasoned judgments	Defend	Propose	Differentiate	Solve	Interpret	Summarize
Assessment Qualifiers	with support	with criteria	most significant	with facts	by organizing	most important
Blooms Taxonomy	Evaluation	Synthesis	Analysis	Application	Compre-hension	Knowledge



BUBBLES : GOING NUCLEAR?

WORKSHEET
Show Me

BIG Q

C2.2 Describe uranium (U) exports and assess the environmental, ... implications and patterns.

C3.2 Describe the location, use, and importance of Canadian uranium (U) to the world.

GEO Concepts

Interrelationships
Patterns & Trends
Spatial Significance
Geographic Perspective

from Ontario Ministry of Education: Canada & World Issues

What's Where?

Go to the Nuclear Reactor Map at <https://climateviewer.com/2013/11/24/10-most-radioactive-places-on-earth/> and describe and suggest reasons for the location of reactors by hemisphere.

Uranium Producers

Kazakhstan	39.3%
Canada	22.0%
Australia	9.3%
Niger	6.8%
Russia	5.0%

% of World's Share

Power Generated

USA	797.2
France	416.8
Russia	195.2
China	170.4
S. Korea	157.2
Canada	98.4

in '000 Gwh Generated

Nuclear Reactors

USA	99
France	58
Japan	43
China	35
Russia	35
Canada	19

Domestic Share

France	76.3%
Ukraine	56.5%
Slovakia	55.9%
Hungary	52.7%
Slovenia	38.1%
Canada	16.6%

compared to other sources

Constructing Reactors

China	20
Saudi Arabia	16
Russia	9
India	6
USA	5
Canada	0

Waste Generated

USA	355.0
Canada	8.1
United Kingdom	3.0
Spain	2.7
Japan	0.4

* in cubic metres stockpiled
** includes power plants, medical isotopes, weapons
*** China, Russia, India do not report inventories

What are the pros and cons of U mining.

Explain how U mining helps Canada?

Should Canada sell U to all nations?

Why would the most powerful nations have the most reactors?

If uranium can lead to weapon's grade materials, who should be allowed to have nuclear reactors?

What are the dis/advantages of nuclear energy?

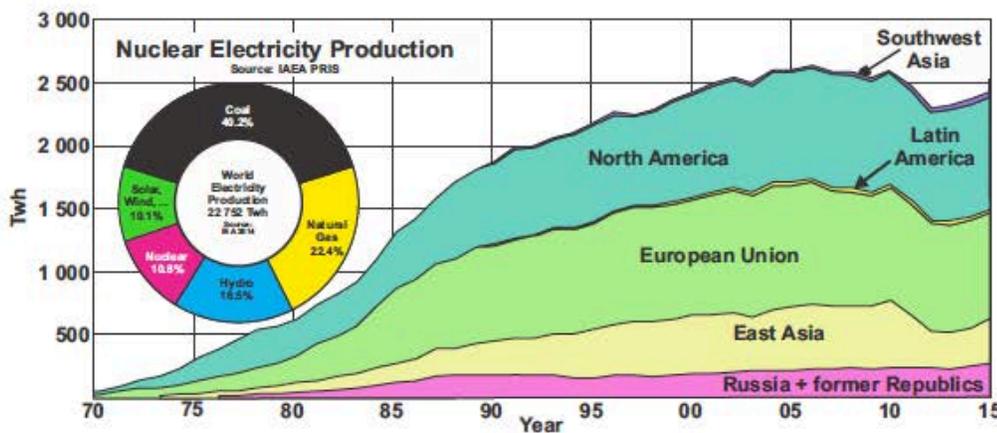
Is nuclear energy green?

Could improved conservation eliminate the need for nuclear energy?

Do we need nuclear energy to deal with global warming?

Germany has 17 reactors producing 25% of its power. Why would it close all its reactors?

Why is nuclear waste an issue?



Describe the pattern(s) illustrated. Start with North America. Finish with the world.

Identify any trend(s). Start with North America. Finish with the world.

Suggest reasons for the patterns/trend(s) illustrated by the graph.

Should nuclear disasters negate the use of nuclear energy?

Why There?

Select and explain either of these questions: *Where is the best site to locate a nuclear reactor or a nuclear waste disposal site?*

Why Care?

Go to *Nuclear Energy Explained: Risk or Opportunity* at [YouTube](https://www.youtube.com/watch?v=d7LO8IL4A14)
<https://www.youtube.com/watch?v=d7LO8IL4A14>
Is Nuclear Energy a risk or an opportunity?

What Now?

Where do we go from here?



BUBBLES: GOING NUCLEAR?

WORKSHEET
Point Me

BIG Q

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Nuclear Reactors

USA	99
France	58
Japan	43
China	35
Russia	35
Canada	19

Domestic Share

France	76.3%
Ukraine	56.5%
Slovakia	55.9%
Hungary	52.7%
Slovenia	38.1%
Canada	16.6%

compared to other sources

Constructing Reactors

China	20
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Waste Generated

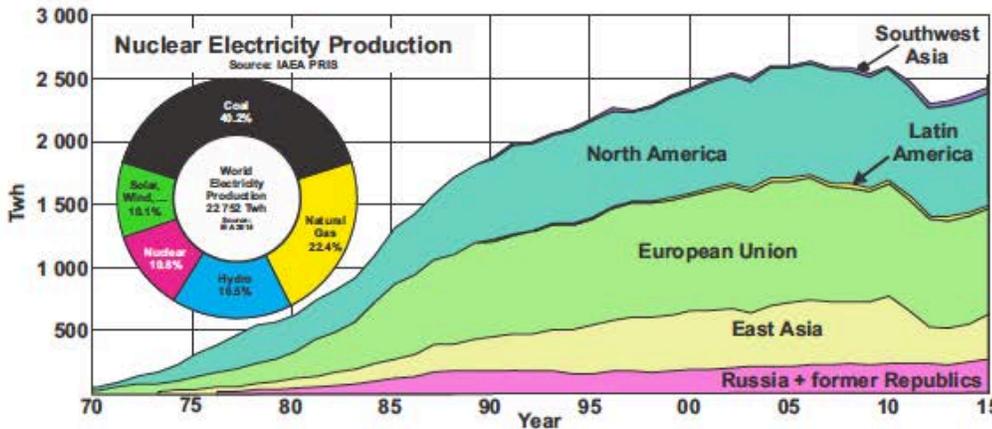
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* in cubic metres stockpiled
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Why There?

Why Care?

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<https://www.youtube.com/watch?v=d7LO8IL4Ai4>
Is Nuclear Energy a risk or an opportunity?

What Now?



BUBBLES: GOING NUCLEAR?

WORKSHEET

Let Me Go

BIG Q

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C3.2 Describe the location, use, and importance of Canadian uranium (U) to the world.

GEO Concepts

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Domestic Share

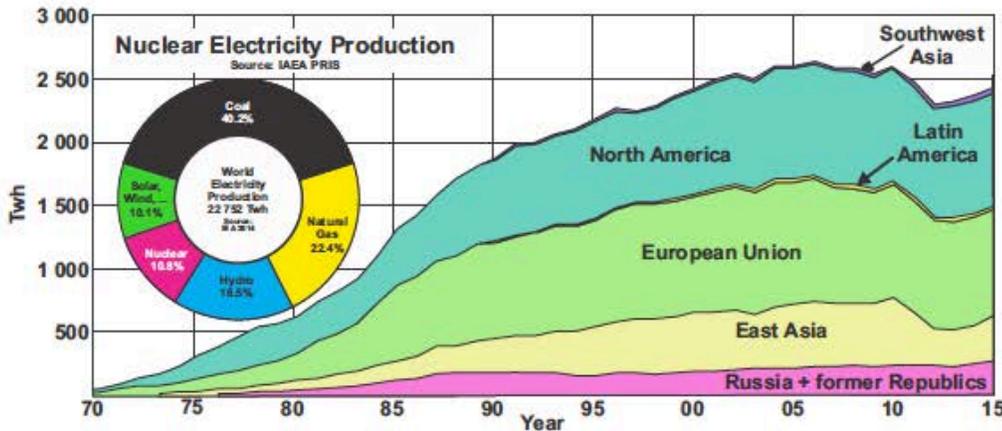
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Why There?

Why Care?

What Now?

CGC1D: A Storybook Course Culminating Assignment

Christina Thomas and Stephen Peers, Geography Teachers, Thomas A. Stewart Secondary School, Kawartha Pine Ridge District School Board

CGC1D - Geography of Canada Course Culminating Assignment

This assignment requires you to discuss in detail one topic from geography that we have covered this semester and develop a children's storybook that presents the information in a fun, colourful way.

The target audience for this book is ages 4-8 years old.

You will be working on this activity individually so use your time wisely.

TASK: You are required to create a children's storybook that contains interesting information using the criteria outlined below. You have choices on how you complete your storybook.

- Poster (Bristol board/poster board)
- Hand written or *Microsoft Word* or *Publisher*
- Storyboard (<https://www.storyboardthat.com/>)
- Internet has other options (please check with your teacher before using one of them)
- Presentation - Reading your book to a Grade 3 class in your school or a feeder school

CRITERIA: For your imaginative city, you must include the following elements in your storybook:

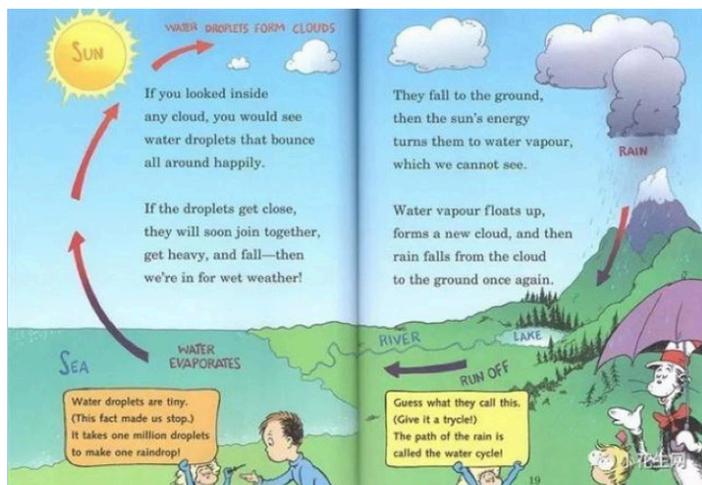
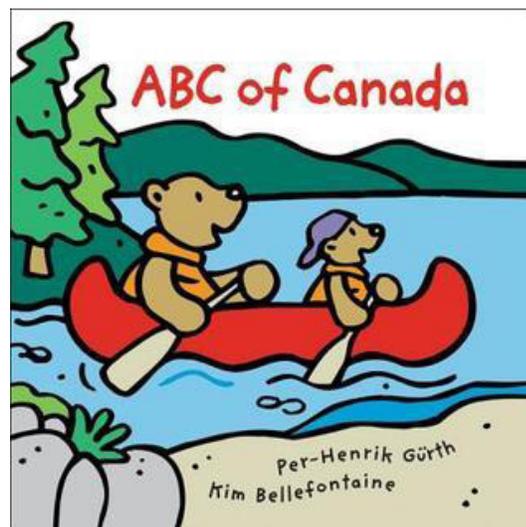
- Create an interesting front cover that includes the name of your imaginative city
- Map of Canada with your city identified
- You must include all mapping conventions on any maps you produce (title, legend, date, labels, compass)
- The book must present **at least 13 geography concepts-terms connected to your area of focus**, have at least **TWO** visuals per page (pictures), have at least four graphs or charts throughout story
- **ONE** main character throughout the story

Helpful Advice:

- > REMEMBER: your book needs to entertain children but also teach the facts
- > Colourful images that relate to the text on the page

For creative ideas please search for the following 2 resources (EDSBY)

- Dr. Seuss "*There's a Map on my Lap!*"
- Dr. Seuss "*Oh Say Can You Say What's The Weather Today?*"



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CGC1D - Geography of Canada Layout of Storybook

Front Cover	Title, image, author and illustrator names
Page 1	Map of Canada with location of city. Mapping requirements: <ul style="list-style-type: none"> - Title, Date, Legend, Border, Labels, Compass - Other criteria for a quality map - Latitude and Longitude - Time Zone - Grid (alphanumerical or military)
Page 2 At least ONE Image	What is the landform of your city? How was this landform shaped? <ul style="list-style-type: none"> - Landform regions, rocks, glaciers, natural vegetation, soil, etc.
Page 3 At least ONE Image	Which natural disaster occurred in your city? (You MUST select one) <ul style="list-style-type: none"> - Earthquake - Volcano - Hurricane - Tornado - Floods - Tsunami <p>Explain the impact this natural disaster had on your city.</p> <ul style="list-style-type: none"> - When did it happen? - Why did it happen? - How did it happen? - Prevention or limit damage?
Page 4 At least ONE Image, ONE graph	What is the climate of your city? <ul style="list-style-type: none"> - Maritime or continental <p>You MUST create a climograph of your city. - Title, labels</p>
Page 5 At least ONE Image	Natural Resource # 1 (renewable) <ul style="list-style-type: none"> - Primary industry - Secondary industry - Tertiary industry - Quaternary industry <p>Identify and explain the factors that affect employment in these industries. What are the different jobs associated with this resource?</p>

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<p>Page 6 At least ONE Image</p>	<p>Natural Resource # 2 (non-renewable)</p> <ul style="list-style-type: none"> - Primary industry - Secondary industry - Tertiary industry - Quaternary industry <p>What are the locations of the different jobs within the city?</p>
<p>Page 7 At least ONE Image</p>	<p>Natural Resource # 3 (renewable or non-renewable)</p> <ul style="list-style-type: none"> - How does this resource negatively affect the environment? - How can we balance our individual needs and wants against the need for sustainable resource use?
<p>Page 8 At least ONE Image, population density calculation</p>	<p>Population statistics</p> <ul style="list-style-type: none"> - Where does everyone live in your city and why? - What is the population of your city? - What is the area of your city? - What is the population density of your city?
<p>Page 9 At least ONE Image</p>	<p>Cultural and Immigration</p> <ul style="list-style-type: none"> - What is the culture of your city? - Where are your city's immigrants from? - Where do they live and work? - Does your city have refugees? If so does this affect your city? Why or why not?
<p>Page 10 At least ONE Image</p>	<p>Describe the urban vs rural communities of your city</p> <ul style="list-style-type: none"> - Settlement patterns, land use patterns
<p>Page 11 At least ONE Image</p>	<p>Indigenous Communities</p> <ul style="list-style-type: none"> - Outline and describe the different Indigenous communities in your city - How do they feel about the natural resources being extracted from the Earth? - Do they agree or disagree and why?
<p>Page 12 At least ONE Image</p>	<p>Identify a problem in your city that needs to be changed to make the city more liveable.</p> <ul style="list-style-type: none"> - Causes and effects, pros and cons - Basic or non-basic
<p>Page 13 At least ONE Image</p>	<p>What are some of the strategies/plans are your city carrying out to make it more of a sustainable community?</p> <ul style="list-style-type: none"> - Is pollution a problem? - Is there high traffic congestion? - Are there higher residential areas and less land available?
<p>Page 14 At least ONE Image</p>	<p>What is climate change and how will it affect the future of your city? What changes can your city make to help reduce climate change?</p>
<p>Back Cover</p>	<ul style="list-style-type: none"> - Interesting facts - Interesting images - Publishing information

THE MONOGRAPH

CGC1D - Geography of Canada Success Criteria

Components	🍏 Name of city & authors, illustrators	
	🍏 Map of Canada	
	🍏 At least 28 pictures in total (relevant, appropriate)	
	🍏 At least 4 graphs/charts in total (relevant, appropriate)	
Interactions in the Physical Environment	Changing Populations	Managing Canada's Resources and Industries
<ul style="list-style-type: none"> 🍏 I can describe the landform region of my city. 🍏 I can explain the physical characteristics of my city. 🍏 I know the weather and climate of my city. 🍏 I can identify the soil and vegetation for my city. 	<ul style="list-style-type: none"> 🍏 I have shown population statistics for my city. 🍏 I have identified and explained cultural diversity in my city. 🍏 I have described settlement patterns in my city. 🍏 I have shown urban land use patterns in my city. 	<ul style="list-style-type: none"> 🍏 I have identified and outlined operations of the basic industries in my city. 🍏 I can describe the activities of a Primary Industry in my city. 🍏 I can identify a Secondary Industry in my city and give the location factors for that industry. 🍏 I have shown and described the main form of Tertiary Employment in my city.

“Do’s” and “Don’t’s”:

Do:

- Use your time well.
- Use the class textbook and your notes as a source of information.
- Set aside some time each night to finish off something you didn't get done in class.
- Work on the page numbers one at a time.
- SAVE your work ON YOUR SCHOOL ACCOUNT each day. Back up your work on a data stick or *Google* account. *You are responsible for any lost work, corrupt files, etc. Make back-up copies!*

Don't:

- Underestimate how important this is. It is worth 15% of your FINAL grade!
- Plagiarize. You **MUST** note where all your information was found. Also, put the information into your own words.

Important Due Dates

Various Computer Labs: <ul style="list-style-type: none"> - This time is VALUABLE! If you use your time well, you can get a great mark. However, this project is TOO BIG to try to do last minute!!!! 	Dates: Work periods will be the two days following each unit test.
Final Due Date: <ul style="list-style-type: none"> - This project is like an exam and is worth 15% of your final grade! 	Date: <input style="width: 150px; height: 20px;" type="text"/>
Presentation Date: <ul style="list-style-type: none"> - Students will be going to read their stories to a Grade 3 class at <input style="width: 100px; height: 20px;" type="text"/> school. 	Date: <input style="width: 150px; height: 20px;" type="text"/>

CGC1D - Geography of Canada Key Terms and Concepts

Definitions and Word Bank:

Use a selection of the following terms/concepts in the text of your culminating assignment. Be sure to use the terms in context for the course. You are **NOT** limited to using these terms only! But most of these should somehow be incorporated into your culminating assignment.

Interactions in the Physical Environment	
Landform:	Geologic history, geologic processes, plate tectonics, landform region
Climate:	Continental or maritime, effect of elevation, effect of latitude, weather, moderating effect of water bodies, climate region
Soil and Vegetation:	Factors that affect soil development, natural vegetation regions, human induced changes to the region
Ecozone:	Ecozone boundaries, ecozone region, climate, landform, vegetation types
Managing Canada's Resources and Industries	
Basic Industries:	Basic/non-basic employment, direct/indirect employment, multiplier effect
Primary:	Resource extraction, type of industry, multiplier effect, location factors
Secondary:	Location factors of industry, type of manufacturing, multiplier effect, value \$ to the city
Tertiary:	Type of service, Tertiary or Quaternary (transportation or communication), value \$ to the city
Changing Populations	
Population Stats:	Birth rates, death rates, immigration rates, emigration rates, population pyramids (age distribution)
Cultural Diversity:	Migration patterns, ethnic origins, international/provincial migration, pull factors for your city
Settlement Patterns:	Population density, location factor(s) for your city, population distribution for your city/region
Urban Land Use:	Urbanization, hierarchy of services available, economic base, urban land use, rural settlement patterns
Liveable Communities	
Housing:	High-density residential infill, alternate lot available, youthification in your city
Farming:	Crop rotation, ethnocultural food
Energy:	Phantom power, solar farms, wind farms, nuclear power plants

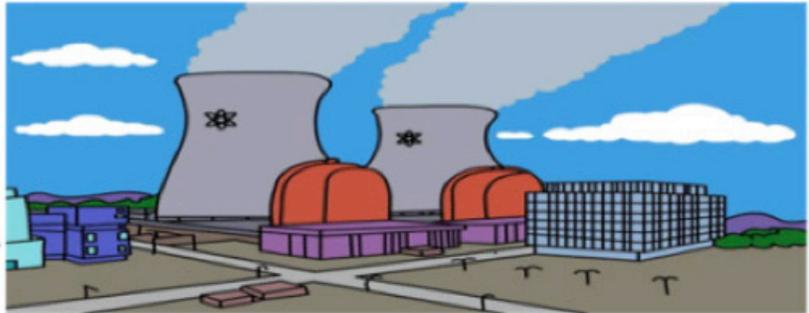
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CGCID - Geography of Canada

Exemplars

Springfield is a town with many jobs that use the land. They say they mine uranium by digging in the sand.

This is the primary industry where workers mine throughout the ground. Then to the secondary where Homer splits the atom lying around.



The energy created needs to get to peoples fast. This is why the service sector tertiary jobs will always last.

Now people say there is something new...a fourth industry in town. One that uses ideas and advertise for Krusty the Clown.

The Quaternary sector is the fancy word for this. That knowledge based industry that Homer will always miss.



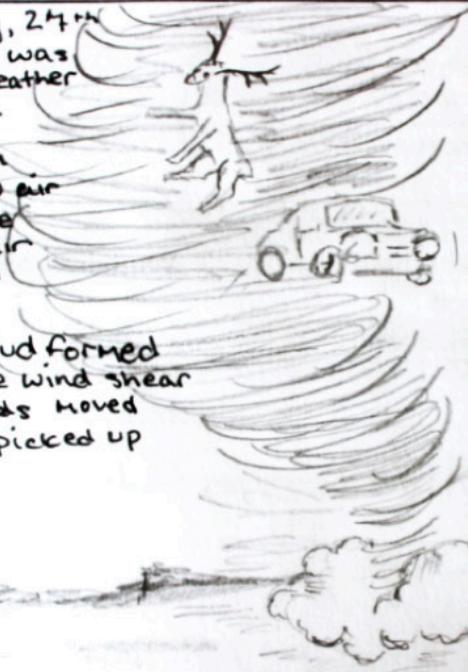
6

by Mister Peers

It was July, 24th 1989. The sun was hot, but the weather was not fine.

A thunderstorm began, when two air masses met. The hot and cold air met, together I bet.

A funnel cloud formed because of the wind shear. The high winds moved vertical and picked up a deer.



It spins like a top, twirling round and round, pulling trees, cars, and houses, right off the ground.

The funnel hit hard, An atmospheric hazard. The final result was many homes a battered.

DART came to the rescue and helped everyone out. But the folks of Peersville worked together, no doubt!

3

by Mister Peers

A Field Study: an Adventure in Local Geography - Harnessing simple data to teach Geography.

- 2019 OAGEE Spring Conference, Huntsville, Ontario.

Linda Gollick, OAGEE Regional Councillor, Region #14 Metropolitan Toronto- Catholic, Pictures by Shawn Hughes



A group picture of the conference attendees

It was great driving up from Toronto, through the Great Lakes - St. Lawrence Lowlands and the Canadian Shield to get to the OAGEE Spring conference in Huntsville on Friday May 3rd.



Brenda Scarlett and the zero-emission bus

We toured the rugged Canadian Shield in a zero-emission electric that took us on fieldtrips to the **Croxall Farms** that specializes in Aquaponic farming. "Aquaponics is the harmonious relationship between aquaculture (raising fish) and hydroponics (soil-less growing of plants)." Koi fish are raised



Claude Brun del Re taking photos of the Koi fish in the vat at Croxall Farms

in large vats and their by-product is used as fertilizer in the hydroponic greenhouse to grow kale and leafy greens. This kale is then sold to the Co-op or restaurants. This is sustainable farming at its best.

Another stop was at the **Tapped Maple Water, Food & Beverage Company**. "The TAPPED crew have simply taken the sap from the maple sugar tree, filtered it, carbonated it, and packaged it for serving – in kegs for the restaurant and resort industry, and, soon, in cans for home consumption." It is a delicious, refreshing drink.



David and conference attendees in the Croxall Farm's greenhouse

Lions Lookout showed us “spectacular views of Huntsville and the surrounding hills”. We observed the street, houses and parks. The partial flooded areas were subsiding along the Muskoka River, much to the relief of the residents of Huntsville.

After a delicious lunch at the Huntsville Summit Centre, Darryl and Dave Scott shared teaching materials that we can use in the classroom to help our students better understand the world - by using spread sheets, *ARCGIS Online*, *Survey 123*, making maps and collecting data with GPS devices.

A great big “*Thank you to Darryl Scott and Dave Scott*” for coordinating the OAGEE Spring 2019 Conference on Friday May 3, 2019 in Huntsville, Ontario.

Quotes from participants at the 2019 OAGEE Spring Conference in Huntsville.

“Had a great time at the OAGEE spring conference. Excellent activities, field trips, and resources delivered by two very inspiring and knowledgeable leaders all surrounded by an amazing setting. Thank you OAGEE for a wonderful day in Huntsville learning about geographical numeracy.”

— **Brenda from Brantford.**

“I really enjoyed the welcoming environment of the conference. It was a great chance to meet other colleagues from across Ontario and learn of some local venues that are harnessing sustainable practices.”

— **Darren from Elmvale.**

*“When I returned to work I was able to use *ARCGIS* and *Survey123* the next day to do a Land Survey activity of our Crestwood neighbourhood. Had I not attended the OAGEE Spring Conference I never would have developed the knowledge and skill to create an *ARCGIS* lesson that quickly and confidently.”*

— **Roger from Peterborough.**



David Scott showing the root structure of the hydroponic plant in the Croxall Farm's greenhouse



View over the Canadian Shield and Huntsville from Lions Lookout

Resources

1. Croxall Farms - <https://croxallfarms.com/>
2. Tapped Maple Water, Food & Beverage Company
<https://doppleronline.ca/huntsville/local-company-putting-nature-on-tap-with-carbonated-maple-tree-sap/>
3. Lions Lookout Trail -
<https://www.discovermuskoka.ca/things-to-do/hiking-trails/lions-lookout-trail/>
4. To see more pictures from the OAGEE Spring Conference - <https://oagee.org/en/confences-home/2019-oagee-spring-conference> - 2019 OAGEE Spring Conference

Geospatial Technology: Trails and Trials - 8

Students at Port Colborne High School get the job done!

Jonathan Fletcher, Program Leader for Canadian and World Studies at Port Colborne High School, Geography teacher and the Vice President - Spatial Technologies, (OAGEE)

How partnering with the professional community enhanced student learning at Port Colborne High School to create professional level maps for DSBN's Outdoor Education Centre.

For many of us, memories of our high school Geography classes bring back memories of Crayola pencil crayons and trying to master perfectly shaded oceans. When students enter my Geography classroom, they hear something that shocks them. They are told on the first day of class that they will not be required to have pencil crayons and that as their teacher, I will never require them to shade in a map for marks. If education is to prepare students for life outside of high school, and my subject area is to teach them Geography, then students should be doing or learning about what professional geographers do and as well, they should be using the same tools.

At Port Colborne High School where I teach, I manage a fully dedicated Geographic Information Systems computer lab running **ArcGIS 10.6**. This lab consists of 27 desktops, a laser printer and a colour laser printer, all donated from **Renewed Computer Technologies**, Niagara. I do the IT for the lab, sometimes recruiting students to help with the process. I use this lab almost every day teaching Geography with technology. In my role as the Vice President Spatial Technologies of OAGEE, I get very excited about using technology in my classroom.

In 2015, I was asked by Colleen Fast, the coordinator of Outdoor Recreation with the District School Board of Niagara (DSBN), if I would be able to create a map of DSBN's Walker Living Campus at Woodend Conservation Area. The task was to map the location of the trails, trail signs, and assets of the outdoor education centre. I contacted the GIS department at Niagara College to see if I could partner with them to work with my students. After a field day with my students and the Niagara College students, I realized that this partnership would not have the direct participation of my students that I was hoping for. Without having access to equipment, I ended up supervising two of the post-grad GIS students in order to complete the project. It was a good experience, but it did not meet my aspirations for my students actively completing the project.

While exploring the trade floor of the Esri User Conference in San Diego in 2017, I decided to check out the Trimble booth and discovered the **Trimble Catalyst**, an affordable high precision digital antenna that worked by attaching it to an **Android** device. I saw some real applications that I could use with this receiver in my classroom. I took a picture of me holding one and sent it to my principal Ann Kennerly with, "Can you buy me one?"

In August of 2018, I was contacted again by Colleen Fast who asked if I could create maps for the renovated DSBN Adventure Campus Outdoor Education Centre similar to the maps that were created for the Walker Living Campus. Again, there was no hesitation to accept the project but I wanted my students to do it. I deferred the project until the spring of 2019 when I would be teaching my Grade 11 CGT30 Introduction to Spatial Technologies class. The Centre had no maps other than the topographic map and the trail system was either not marked or highly inaccurate. Along the trail, there are numbered signs that needed to be accurately mapped. As well, all assets were to be identified on the maps.

In order to attack this problem, I knew I needed the equipment to gather accurate points, so in October, I asked (begged) my principal to purchase a **Trimble Catalyst**. After presenting my case, Ann agreed to purchase one unit. Being in public education, spending the \$500 depleted my budget.

We move to February 2019 and I am trying to figure out how to get a survey pole. I thought "if only I knew a land surveyor with an old pole that wasn't needed anymore". That's where Maureen Mountjoy came in. I had just finished running the OAGEE Fall Conference in November when I realized that I had been working with Maureen to book the table for the AOLS. I emailed Maureen and she put the call out to the members of the AOLS with great success. Within one week, I was blown away by the generosity of AOLS members. A big



A Trimble Catalyst

thank you to Bruce Pettit, OLS Retired and Matthew Shelley – Mohawk College Technologist who donated 2 used survey poles with only 1 *Trimble Catalyst*. Then, thanks to Harold Hyde, OLS of Rasch & Hyde Ltd., I was able to purchase 3 additional Trimble Catalysts and 2 poles to have a total of 4 Trimble Catalysts with 4 poles. Amazing!

On its own, a *Trimble Catalyst* can get 1 m accuracy. In April, Brock Kingston from Cansel was able to convince Trimble to donate four 3-month *Catalyst Precision* subscriptions to my class for free! One thing I didn't consider is that my students preferred Apple phones over Android. Trimble Catalysts only work with Android. The phone doesn't need to have a SIM card and will work if it is fairly new and can connect to Wi-Fi. I put out a request to parents at my school for old phones that weren't being used for anything, and again, people came through and I got everything we needed to complete the project.

Armed with rubber boots and sheer determination, I took 20 of my students out to the *DSBN Adventure Campus* to collect data. To map the trails, I created a series of empty feature services using *Esri Survey123*, added it to a map in *ArcGIS online*, and then used Collector for ArcGIS with the *Trimble Catalyst Service*. Now since I had only received the subscriptions a few days earlier, the data collection did not start as smoothly as planned and I had to do some quick problem solving in the Centre to get everything working while an instructor at the centre gave my students a tour of the facility and told them what needed to be mapped. That gave me the time I needed. We collected our points and headed back to school.

Now we come to this May. Our results demonstrated that there was room for improvement. Some of the points were not accurate. Another visit was scheduled for May 16 with a smaller group, as many students could not take a day from their other classes. With a much more refined and efficient method, we were able to collect waypoints for the trails, correct some of the sign and asset data, as well as collect the points for another trail that the Centre uses in Short Hills Provincial Park.

Back in class using *ArcMap 10.6*, the students were tasked to connect the dots of the waypoints and draw in the trails, assets and signs. I was able to get the *SWOOP 2018* tiles for the area, which was incredibly useful. The students were given the logo of the Adventure Campus, DSBN and Port Colborne High School. For marks, students created a

map of the overall site as well three maps of the different trails in detail.

In June I brought the completed maps to Colleen and we selected the maps that best communicated what was needed for the site, which included the work of my students, Aidan, Hannah, Ashton, Cory, Joel and Anandi. I assigned Aidan the role of project manager. He is my co-op student and 3-time provincial GIS gold medalist in Ontario (Hannah was his partner). His job was to take all of the great work from the other students and tweak them just a little to make everything consistent such as colour, symbology and overall appearance. The six maps included poster sized maps of the entire site and of the buildings and letter-sized maps of the entire site and each of the three trails. Julie Wiersma, the media arts teacher at my school, designed a logo for us as well that had to be added.

We finished on June 21st. These maps will be used by the DSBN Adventure Campus staff and visitors for years to come.

On October 7-8, 2019, these students will be presenting their work at the Esri Canada Toronto User Conference, likely on the main stage during the plenary session.

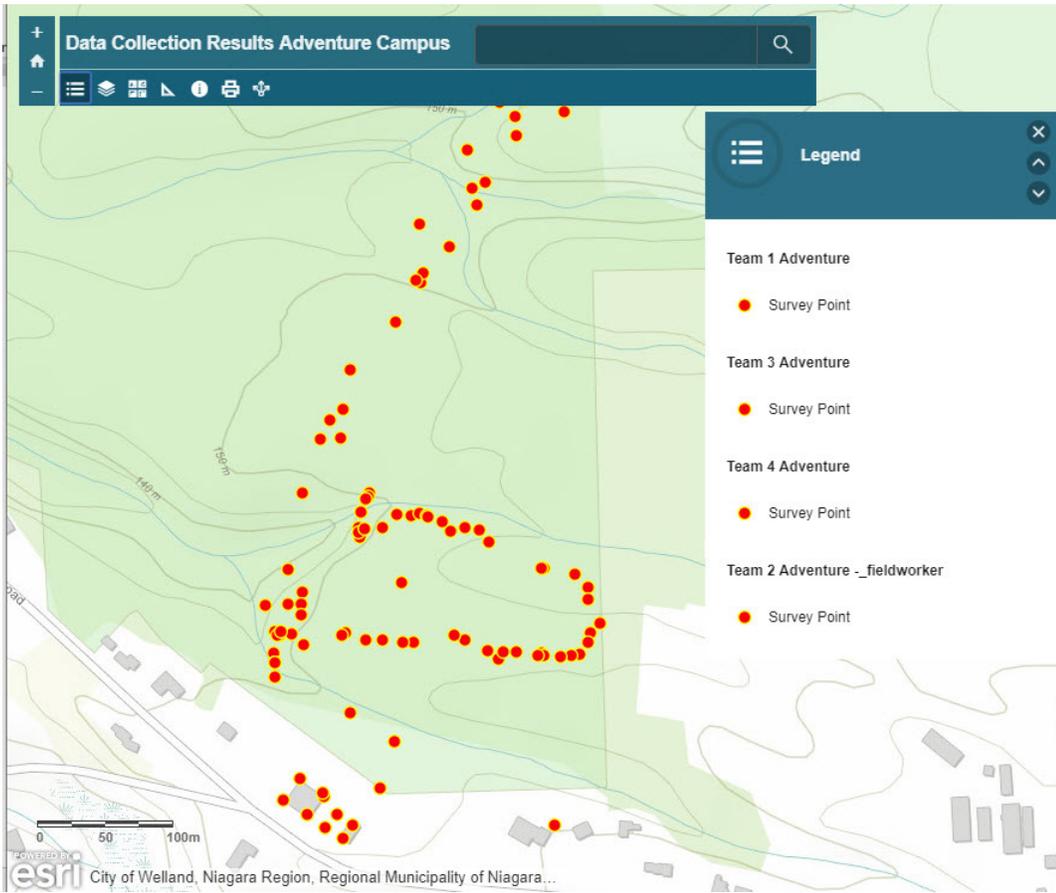
What's next?

I am very active on social media particularly when it comes to geographic education and geotechnology on *Twitter*. Wade Leonard of Limestone District School Board came to my attention. His Twitter handle is "*Above and beyond with Drones W. Leonard*", @*beyond_aboveand*. Through many great chats online, he convinced me that this is where I should take my program. My principal, who was thoroughly impressed with our project, found some money in her budget to buy a drone for my program as I look to bring photogrammetry, aerial surveys, and remote sensing into my classroom. I am taking the *Advanced RPAS* (Remotely Piloted Aircraft Systems) course this summer.

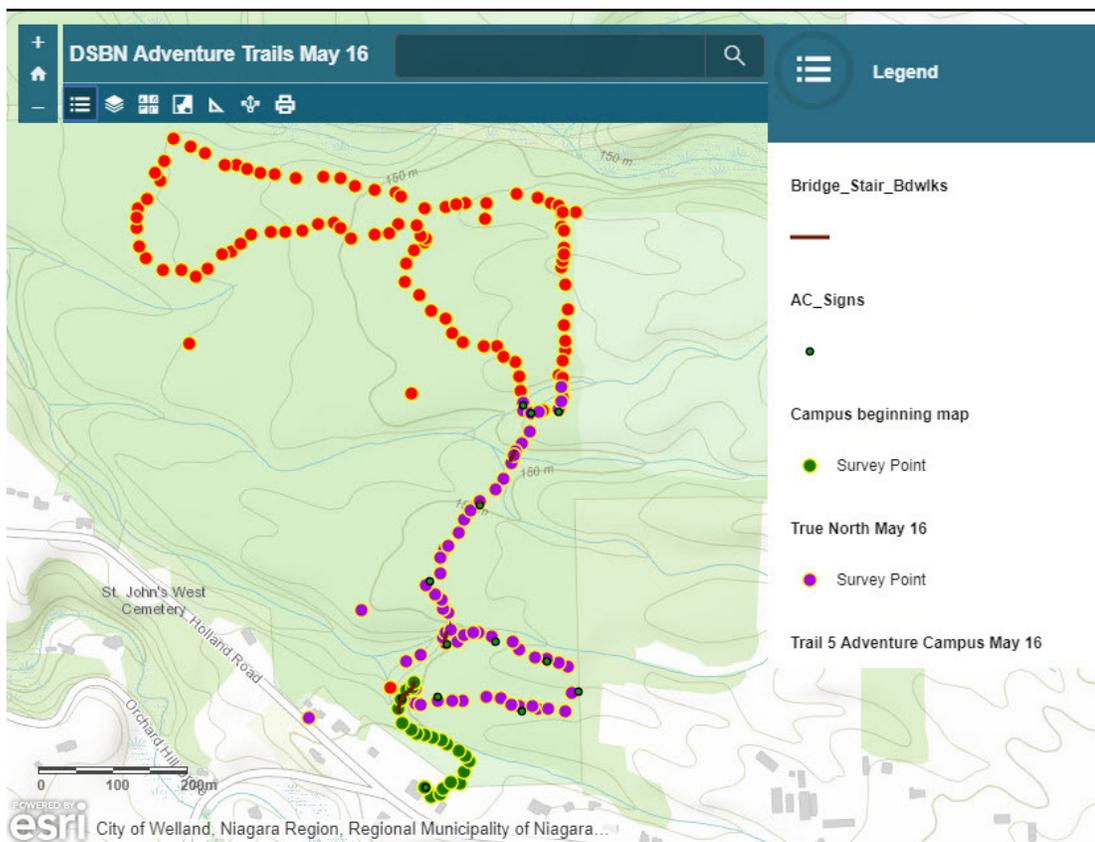
At the 2019 OAGEE fall conference in Ottawa, I will be leading some workshops sharing my experience with technology from beginners to advanced.



Student GIS Class



Student Raw Maps



THE MONOGRAPH



Ridge Trail System
1:1,000
Generated by Ashton Jaffe and Aidan Hawkins on June 19th, 2019 using ArcGIS for Desktop Advanced (GIS) Version 10.8 Redlands, CA. ESR 2018.
Land survey was completed by GIS students from Port Colborne High School, Spring 2019. Imagery by Swoop 2018.



True North Trail System
1:2,000
Generated by Ashton Jaffe and Aidan Hawkins on June 19th, 2019 using ArcGIS for Desktop Advanced (GIS) Version 10.8 Redlands, CA. ESR 2018.
Land survey was completed by GIS students from Port Colborne High School, Spring 2019. Imagery by Swoop 2018. Winter Topographic Map.

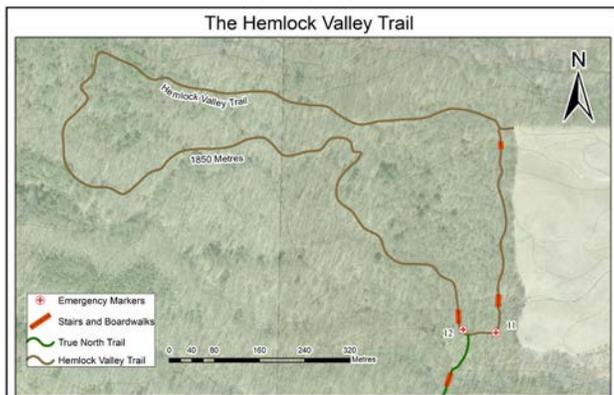
DSBN Adventure Campus



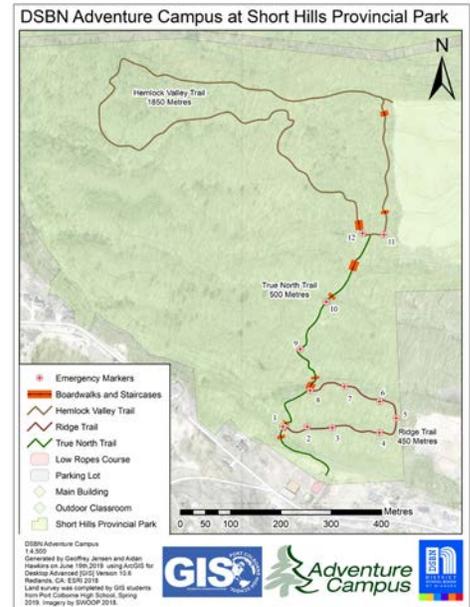
DSNB Adventure Campus
1:4,000
Generated by Hannah Walker, Joel Wood and Aidan Hawkins on June 19th, 2019 using ArcGIS for Desktop Advanced (GIS) Version 10.8 Redlands, CA. ESR 2018.
Land survey was completed by GIS students from Port Colborne High School, Spring 2019. Imagery by Swoop 2018.



Finished Student Maps



Hemlock Valley Trail
Scale 1:4500
Generated by Cory Fern and Aidan Hawkins on June 19th, 2019 using ArcGIS for Desktop Advanced (GIS) Version 10.8 Redlands, CA. ESR 2018.
Land survey was completed by GIS students from Port Colborne High School, Spring 2019. Imagery by Swoop 2018.



DSNB Adventure Campus
1:4,000
Generated by Geoffrey Jensen and Aidan Hawkins on June 19th, 2019 using ArcGIS for Desktop Advanced (GIS) Version 10.8 Redlands, CA. ESR 2018.
Land survey was completed by GIS students from Port Colborne High School, Spring 2019. Imagery by Swoop 2018.

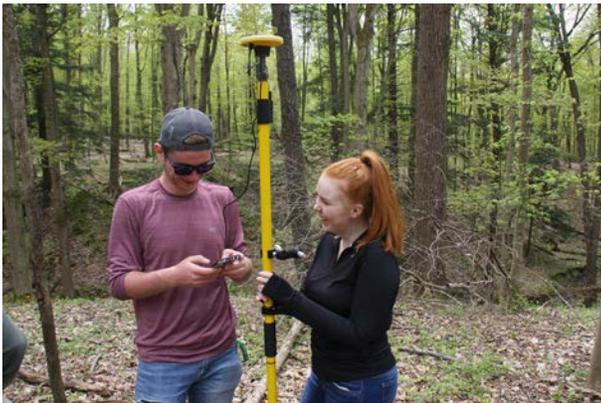
Student quotes

"Using the Trimble Catalyst was a lot of fun and definitely added to the experience at the adventure campus. Seeing all of the data come in and even learning to use it was a great experience. I enjoyed collecting my own data that I would use to create my own map. It really made the project feel like it was my own."



"I enjoyed getting to learn how to use the equipment. Seeing that I could use the data collected with the catalyst in my maps was exciting. I realized how the data our class had been using in other projects would have been collected, and I had not understood that before."

"The ability to do both the on-site surveying, and the in-class cartography was interesting since it gave us real world experience as if we were contracted to complete a project for a client."



"Seeing first-hand the practical uses of GIS software. Getting out of the class and in nature was also a good change of pace from the rest of the course. Taking points ourselves also made the data more meaningful and allowed me to draw additional conclusions based on the experience on-site."

"I enjoyed the hands-on out of class time, I also enjoyed the ability to learn skills that are not commonly taught in high school. Doing a project that would also be used at the Adventure Campus made it more enjoyable and encouraged me to work harder."



BOOK REVIEW

Factfulness: Ten Reasons We're Wrong About the World--and Why Things Are Better Than You Think

Hans Rosling with Ola Rosling and Anna Rosling Ronnlund

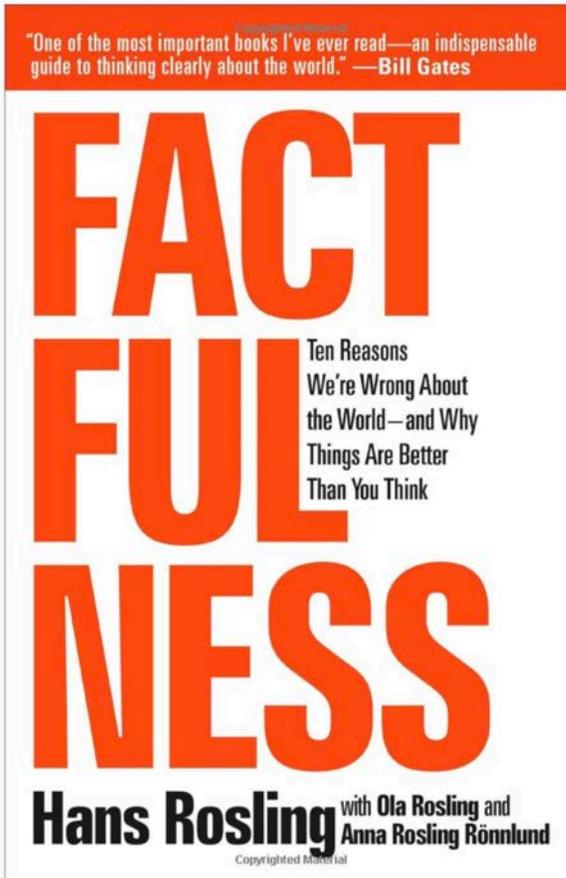
Flatiron Books, Copyright 2018, 352 pages, Hardcover, C\$ 20.53 (Amazon)

ISBN 978-1-250-10781-7

Being a retired educator, I am privileged to finally have some time available to read and enjoy, on a daily basis, Canada's National newspaper - The Globe and Mail. Last August I read an opinion piece by Marcus Gee, a G&M staff writer. The article was titled "*Even without rose-tinted glasses, life's still a lot rosier*". Needless to say, the title peaked my interest! The article (G&M Aug. 25/18 page A8) featured a review of several books which focus on presenting the opinion that the world is indeed becoming a better place vs the steady diet of pessimism which we get on an ongoing basis in most of the media. One of the books featured is titled **FACTFULNESS: Ten Reasons We're Wrong About the World - and Why Things Are Better Than You Think** (2018). The article was so intriguing that it motivated me to seek out the book and read it. The authors are Hans Rosling with Ola Rosling and Anna Rosling Ronnlund. I had not come across their material before - I guess that is what happens when one is retired!!! However, I soon learned that Hans Rosling, before his recent passing, was very popular for his TED Talks and *The Gapminder * Foundation*, which he founded.

Needless to say, I enjoyed the book and it certainly made me reconsider my perceptions/understandings of global development which were grounded in my formal university education in the 1960s. Having always been interested in global issues, and having taught the World Issues Geography course, I look back now and wish I had an opportunity to share the insights of this book with contemporary secondary school students.

The book is divided into ten key chapters, each of which focusses on one main perception/instinct we, those of us who live in the developed or Level 4 world, often consider as a truth. The book begins by having readers test themselves by answering 13 multiple choice questions. Here is the first question: "*In all low-income countries across the world today, how many girls finish primary school?*" A) 20 %, B) 40%, C)



60%. The authors have presented this set of questions to audiences around the world and on average only 7% of respondents selected the correct answer, C) 60%. The authors go on to explain, using available UN statistics, the gap between our perceptions/instincts and the current global reality of the situation. As a matter of interest, summary data for selected countries' responses to each question, are provided. Sweden had the most correct with 11%. Canada was well down the list at only 5%. The authors go on to help the reader understand WHY they might have these inaccurate impressions as well as offering concrete suggestions on how we can all become more grounded in FACTFULNESS.

What immediately springs to mind is the opportunity to use these 13 multiple choice questions as an introduction or springboard for classroom discussion on global issues themes. Have students complete the test, score the tests anonymously and then share the cumulative class score. This will

usually reveal a wide gap between student perceptions/instincts and the correct responses, an excellent starting point for further discussion.

Without going into detail, the ten basic instincts which the Rosling's tackle each have an intriguing title. Here they are:

- The Gap Instinct
- The Negativity Instinct
- The Straight Line Instinct
- The Fear Instinct
- The Size Instinct
- The Generalization Instinct
- The Destiny Instinct
- The Single Perspective Instinct
- The Blame Instinct
- The Urgency Instinct

Each of these instincts is explained with lots of easily interpreted graphs, charts, maps, photos, and examples drawn from global experience. The book has extensive up-to-date supports in the Appendix (where one can see how their country does), notes, and sources. The book is available as an e-book as well, so one might be able to capture the various graphs, maps, and charts to visually incorporate into their classes. For me, it is the kind of book where I read one of the chapters and then needed to put the book down and think about it for a bit before going on to the next theme/topic/instinct.

The book concludes with a chapter on *"Factfulness in Practice"* as well as a visually-grabbing summary entitled *"Factfulness Rules of Thumb"* on page 256. Inside the back cover of the book is a great set of images titled *"Life on the four income levels"* which presents an easily interpreted grid of indicators of what life looks like. The categories illustrated in pictures include: drinking water, transportation, cooking, eating and sleeping. Below this grid of photos is a graphic illustration of the proportion of the world's population living in level 1 (up to \$2/day), 2 (2-8\$/day), 3 (8-32 \$ /day) and 4 (over \$32 /day). You will be interested to see how the current world population (2017) of approximately 7 billion people is distributed over the four levels - any guesses????

The reading level of this book is what I would consider to be *"invitational"* to a wide audience, including secondary school students. In fact, I think it would be interesting to have Global Issues students work in groups to tackle, discuss, and present/share the ten different instincts to their peers in class.

If you are teaching in a secondary school, I would heartily recommend that you encourage your school library to purchase copies of this very readable and worthwhile book, assuming they still do that! There is certainly lots of *"Food for Thought"* for all of us, including time well spent as PD for any Geography educator. I can guarantee this book will challenge all readers to look at the world in a new light.

Please do not think for a moment that the authors are simply telling us that everything in the world is great. They certainly are not. They are quick to recognize and appreciate that there is, indeed, much which is wrong in the world today and needs improvement. However, what they are trying to do, quite convincingly in my opinion, is to help us all step back and appreciate the *"big picture"*. Most of us did not score very well on the quiz at the beginning of the book. As a group we perceive things to be getting worse rather than better. The reality is that, on a global basis, things are improving - as in the first question where most of us were surprised to learn that now 60% of girls in low-income countries are now completing primary school.

I hope that you will find this book as interesting and challenging as I have. Hopefully, it will have some impact on how you guide students, in grades 9-12, or beyond for that matter, in how we can have better, more accurate instincts, as we explore the world of Geography in Canada and its relationship with the rest of the world. Enjoy!!

Review by Dickson Mansfield, retired Geography Educator

Websites for Further Information

<https://www.gapminder.org/>

<https://www.nature.com/news/three-minutes-with-hans-rosling-will-change-your-mind-about-the-world-1.21143>

<https://www.bbc.com/news/magazine-24835822>

Further information on the book from the dust jacket.

When asked simple questions about global trends - what percentage of the world's population lives in poverty; why the world's population is increasing; how many girls finish school - we systematically get the answers wrong. So wrong that a chimpanzee choosing answers at random will consistently outguess teachers, journalists, investment bankers, and Nobel Laureates.

In *Factfulness*, professor of international health and global TED phenomenon Hans Rosling - together with his two longtime collaborators, Anna and Ola - offers a radical new explanation of why this happens. They reveal the ten instincts that distort our perspective - from our tendency to divide the world into two camps (usually some version of us and them) to the way we consume media (where fear rules) to how we perceive progress (believing that most things are getting worse).

Our problem is that we don't know what we don't know, and even our guesses are informed by unconscious and predictable biases.

It turns out that the world, for all its imperfections, is in a much better state than we might think. That doesn't mean there aren't real concerns. But when we worry about everything all of the time instead of embracing a worldview based on facts, we can lose our ability to focus on the things that threaten us most.

Inspiring and revelatory, filled with lively anecdotes and moving stories, *Factfulness* is an urgent and essential book that will change the way you see the world and empower you to respond to the crises and opportunities of the future.

"One of the most important books I've ever read an indispensable guide to thinking clearly about the world." – Bill Gates

"Hans Rosling tells the story of 'the secret silent miracle of human progress' as only he can. But Factfulness does much more than that. It also explains why progress is so often secret and silent and teaches readers how to see it clearly." – Melinda Gates

"Factfulness by Hans Rosling, an outstanding international public health expert, is a hopeful book about the potential for human progress when we work off facts rather than our inherent biases." – Former U.S. President Barack Obama

BOOK REVIEW

The Red Atlas: How the Soviet Union Secretly Mapped the World

John Davies and Alexander J. Kent

University of Chicago Press, 2017

ISBN 978-0226389578, hardcover, C\$40.17 Amazon, 272 pages (282 colour plates)

Davies, editor of *Sheetlines*, the Journal of the Charles Close Society for the Study of Ordnance Survey Maps, and Kent, president of the British Cartographic Society, have written a historical geography of the world through the eyes of Soviet strategists and spies.

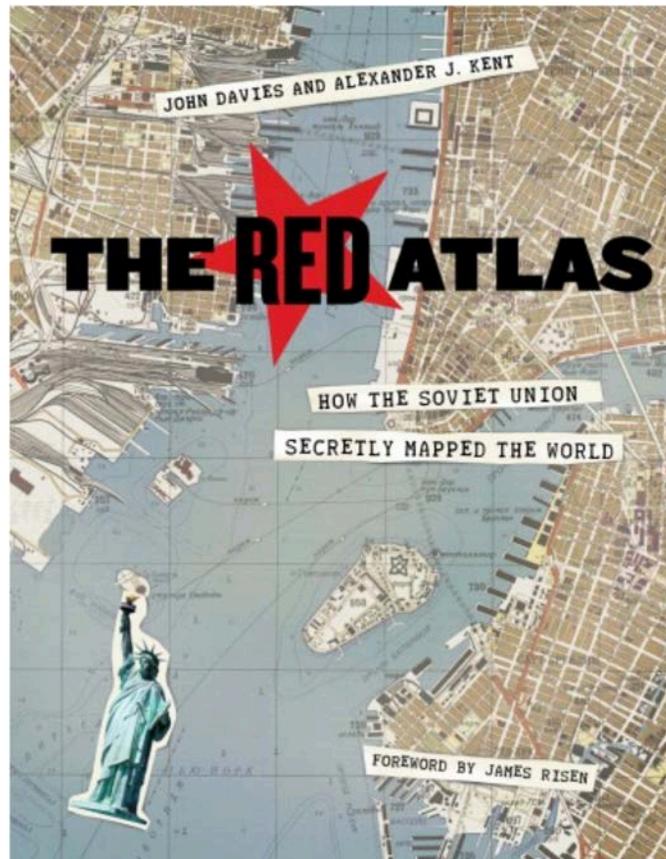
In a day of **WikiLeaks**, Russian access to information may not seem so shocking. However, the amount of detailed information the Soviets knew about Canada and other nations during the Cold War is hard to imagine. *The Red Atlas* tells a detailed story about Soviet mapping.

Russian mapping predates Napoleon's 1812 invasion when Tsar Alexander had the Military Topographic Depot producing detailed maps of the Empire.

Following the Bolshevik Revolution of 1917, the 1:1 000 000 scale maps were completed under a veil of continuous secrecy. By 1921, selected large (1:10 000) to small (1:500 000) scale maps were being produced to support planning strategies.

Topographic detail became paramount prior to the Nazi invasion of 1941. Stalin intensified the mapping program to support military operations and to advance global communism. By 1954, the entire Soviet Union was mapped at 1:100 000 using aerial photography and ground geodetic control. By 1987, mapping the USSR at 1:25 000 scale produced 200 000 maps alone.

Throughout the Cold War, 1946 - 1991, world mapping was underway. All Soviet maps used the same symbology, colours, and naming conventions. Even with remote sensing, boots on the ground in all world venues produced an unbelievable amount of data using a similar unbelievable number of spies.



While many nations deliberately blocked out map data of strategic locations, Soviet maps had those details and more. Bridges, for example, indicated road widths, clearance heights, construction materials, heights above water, carrying capacities, and river speeds. Trees indicated girth, heights, spacing, and species. These were key indicators that the Soviets were collecting data while in country.

The detail of these maps was remarkable given the need for accuracy and secrecy. Only a few individuals had knowledge of the extent of the mapping inside and outside the USSR. Any map information was restricted to a need to know basis. All maps had to be signed out and then signed in. Even if the map was damaged or destroyed, all remnants had to be returned.

Despite efforts to control the maps, the collapse of the USSR led to certain military personnel gaining access to the maps. Maps were sold for personal gain. Collectors and libraries managed to gain access to some of these maps. Other maps fell into western hands when some Soviet map depots, in newly created republics, attempted to dump their collections.

At the Latvian map depot, 6 000 tonnes of maps were ordered to be destroyed. As some Russian officers started disposing the maps as waste paper, a Latvian orienteer negotiated a purchase of 100 tonnes. Unfortunately, only two to three tonnes survived after local children set fire to his acquisition. This Latvian set up a map shop which continues to do well.

Overall, the *Red Atlas* tells a fascinating researched tale of Soviet cartographic history. Just comparing Soviet maps to American, British, or Canadian maps was a major enterprise for the authors.

THE MONOGRAPH



A 1980 Soviet map of San Diego naval facilities (top) compared to a USGS map of the same area (below). Note the missing detail (shaded areas) on the American map compared to the detail of the same areas on the Soviet map.



President

Ewan Geddes, TDSB
York Mills Collegiate Institute
(416) 395-3340 (business)
E-mail: ewan.geddes@tdsb.on.ca

Past President

Shawn Hughes, KPRDSB
Crestwood Secondary School
(705) 742-9221 (business)
(705) 742-1957 (FAX business)
E-mail: shawn_hughes@kprdsb.ca

Recording Secretary

Brenda Scarlett, LDSB
Bayridge Secondary School
(613) 389-8932 (business)
(613) 389-3135 (FAX) business
E-mail: scarlett@limestone.on.ca

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Vice-President - Curriculum

Ivan Ius
E-mail: ivanius100@gmail.com

Vice-President - Conferences

Paul Hackl, TDSB
Toronto Urban Studies Centre
(416) 393-0851 (business)
E-mail: paul.hackl@tdsb.on.ca

Vice-President - Communications

Anne Smith, Faculty of Education
Queen's University
(613) 533-6000 x 77430 (business)
E-mail: smith.anne@queensu.ca



Vice-President

- **Geotechnologies**
Jonathan Fletcher, DSBN
Port Colborne High School
(905) 835-1186 (business)
E-mail: Jonathan.Fletcher@dsbn.org

Treasurer

Lew French
603-500 Ridout Street North
London, Ontario N6A 0A2
(519) 439-3396 (home)
E-mail: lewfren68@gmail.com

The Monograph

Gary Birchall
36 Secinaro Avenue
Ancaster, Ontario L9G 0C6
(905) 304-6534 (home)
E-mail: gbirch@cogeco.ca

REGIONAL COUNCILLORS

Region #1

Southwestern Ontario

Heather Publon, GECD SB
Leamington District Sec School
(519) 326-6191 (business)
E-mail: 19249@publicboard.ca

Region #2

South-Central

Region #3

Georgian Bay-Wellington

Joanne Robb, UGD SB
Guelph Collegiate & VI
(519) 824-9800 (business)
E-mail: joanne.robb@ugdsb.on.ca

Region #4

Niagara-Hamilton

Maria Gountzounis, DPCDSB
St. Francis Xavier Sec. School
(905) 507-6666 X73370 (business)
E-mail: m.gountzounis@gmail.com

Jonathan Fletcher, DSBN

Port Colborne High School
(905) 835-1186 (business)
E-mail: Jonathan.Fletcher@dsbn.org

Region #5

Halton-Peel

Bethany Gill, PDSB
West Credit Secondary School
(905) 858-3087 (business)
E-mail: bethanymgill@gmail.com

Alanna Grant, PDSB

Louise Arbour Secondary School
(905) 793-5451 (business)
E-mail: alanna.grant@peelsb.com

Laura Edge, HDSB

Halton District School Board
(905) 632-6120 x 478 (business)
E-mail: edgel@hdsb.ca

Region #6

Metropolitan Toronto - Public

Ling Wong, TDSB
Riverdale Collegiate Institute
(416) 393-9820 (business)
E-mail: miu.wong@tdsb.on.ca

Paul Hackl, TDSB

Toronto Urban Studies Centre
(416) 393-0851 (business)
(416) 393-0089 (FAX)
E-mail: Paul.Hackl@tdsb.on.ca

Region #7

York-Durham

John Macdonald, YRDSB
Markham District High School
(905) 294-1886 x337 (business)
Email: john.a.macdonald@yrdsb.ca

Region #7

Central Ontario

Dave Scott, TLDSB
Huntsville High School
(705) 789-5594 (business)
E-mail: david.scott@tldsbs.on.ca

Darryl Scott, TLDSB

Huntsville High School
(705) 789-5594 (business)
E-mail: darryl.scott@tldsbs.on.ca

Christina Thomas, KPRDSB

Clarke High School
(905) 987-4771 (business)
E-mail: darryl.scott@tldsbs.on.ca

Region #9

Kingston-Rideau

Brenda Scarlett
Bayridge Secondary School
(613) 389-8932 (business)
(613) 389-3135 (FAX) business
E-mail: scarlett@limestone.on.ca

Anne Smith

Faculty of Education
Queen's University
(613) 533-6000 x 77430 (business)
E-mail: smith.anne@queensu.ca

Region #10

Ottawa-Carleton-Renfrew

Brian Beard, OCDSB
Colonel By Secondary School
(613) 745-9411 (business)
E-mail: brian.beard@ocdsb.ca

Region #11

Northeastern Ontario

Kathleen Cote
Occasional Teacher, Wawa ON
E-mail: kathleen.cote@gmail.com

Region #12

Northwestern Ontario

Randy Wilkie
(807) 475-7390 (business)
E-mail: wilkgfx@tbaytel.net

Region #13

Waterloo-Grand Erie

Adam Kasper, WRDSB
E-mail: adam_kasper@wrdsb.ca

Region #14

Metropolitan Toronto - Catholic

Linda Gollick, TCDSB
(416) 752-4455 (home)
E-mail: linda@bevast.com

Jennifer Lo Gatto, TCDSB

Chaminade College S.S. School
(416) 393-5509 (business)
Email: jennifer.logatto@tcdsb.org

SPECIAL INTEREST COUNCILLORS

Colleges & Universities

Anne Smith
Faculty of Education
Queen's University
(613) 533-6000 x 77430 (business)
E-mail: smith.anne@queensu.ca

Canadian Geographic Education (CG Edu)

Ewan Geddes
E-mail: ewan.geddes@tdsb.on.ca

Ministry of Education

Jennifer Farrell-Cordon
E-mail: Jennifer.Farrell-Cordon@ontario.ca

Poster Printing

Sue Hotte
(905) 932-1646 (home)
E-mail: suehotte@yahoo.ca

Représentante franco-

phone pour l'AEGEO
Claude Brun del Re
E-mail: claubedr@live.ca

Independent Schools

Mike Farley
University of Toronto Schools
(416) 868-5241 (business)
E-mail: mfarley@utschools.ca

Ontario Geography Consultants Association (OGCA)

Laura Edge, HDSB
Halton District School Board
(905) 632-6120 x 478 (business)
E-mail: edgel@hdsb.ca

Grades K to 8

Jennifer P. Alves, DPCDSB
(905) 794-5031 (business)
(647) 993-0583 (cell)
E-mail: jlpalves2011@gmail.com

Industry Representation

Jean Tong, Esri
(416) 386-6425 (business)
E-mail: jtong@esricanada.com