

# TEACH LE PROF

JAN/FEB 2011 \$3.85

EDUCATION FOR TODAY AND TOMORROW - L'EDUCATION - AUJORD'HUI ET DEMAIN



## CURRICULA:

Canadian Northern Project:  
**Diversity and  
Canada's North**

## FEATURES:

The Changing  
Nature of Play  
Le jeu change  
de nature



A Better way of  
**Learning**  
Meilleure façon  
d'apprendre

The New

# BrightLink™

Interactive Projector



## Ultra Practical

Make better use of available classroom space.

With BrightLink™ you can turn virtually any smooth wall into an i-wall.

BrightLink is available through your Brighter Futures Representative.

Find them at [epsonbrighterfutures.ca](http://epsonbrighterfutures.ca).



## Do the Math

Calculate your savings online at  
[epson.ca/BrightLink](http://epson.ca/BrightLink).

Epson is a registered trademark and Epson Exceed Your Vision is a registered logomark of Seiko Epson Corporation. BrightLink is a trademark of Epson America, Inc. Copyright 2010 Epson America, Inc. Product specifications are subject to change without notice.

**EPSON**  
EXCEED YOUR VISION



## FEATURES

---

The Changing Nature of Play ..... 9  
*Martha Beach*

Le jeu change de nature ..... 11  
*Martha Beach*

## COLUMNS

---

### Futures

The Law of Unexpected Consequences:  
A Better Way of Learning ..... 5  
*Richard Worzel*

### Le Futur

La loi des conséquences imprévues, ou une  
meilleure façon d'apprendre ..... 7  
*Richard Worzel*

### Web Stuff

BitStrips for Schools and Wolfram|Alpha ..... 21

## DEPARTMENTS

---

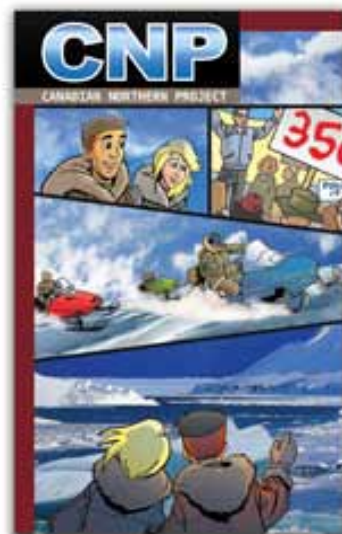
### CURRICULA

Lesson 4: Diversity and Canada's North ..... 13

AD INDEX ..... 6



**9**



**13**

# NOTES

**I**n this, the first issue of the year, we discuss a question that will become more prevalent throughout this new decade – that of Canada’s sovereignty in the Arctic Archipelago. Until recently, much of the landmass in the Arctic Circle has been buried under a sea of ice. Global warming is now melting the ice and a global sparring has begun over which country is the rightful sovereign. Countries bordering the Arctic such as, Russia, the United States (Alaska), and Denmark are claiming part of the land as their territory. The Northwest Passage, a series of waterways throughout the Archipelago is now more accessible due to the melting ice and several countries claim it is an international waterway while Canada says it is Canadian Internal Waters.

The question of the Arctic Archipelago raises concerns beyond political ones. The Canadian Northern Project, an online teaching resource by TEACH, explores this topic in a variety of ways including, citizenship, diversity, multiculturalism, and governance and Canada’s North. Visit [www.teachmag.com/cnp](http://www.teachmag.com/cnp) to find lesson plans, graphic novel, online youth summit, and other valuable teaching tools.

In Futures, Richard Worzel also discusses the Canadian Arctic. Learning about a real world problem can lead students to make wider range insights than with typical subjects.

Also in this issue is our feature story that explores the changing nature of play. Natural playgrounds and loose object provide unstructured and interactive play uncommon in traditional playgrounds. They are also safer, allowing adults to simply supervise and not intervene with children’s imaginations.

We expect 2011 to be a year full of positivity and wish you the best in all of your endeavours as you lead your students through the new decade.

Lisa Tran, Assistant Editor

**D**ans ce numéro, le premier de l’année, nous étudions une question qui, au cours de la nouvelle décennie, va prendre de plus en plus d’importance, à savoir celle de la souveraineté du Canada sur l’archipel de l’Arctique. Jusqu’à récemment, le plateau continental du cercle arctique était noyé sous une mer de glace. Le réchauffement de la planète fait maintenant fondre la glace et l’on se bat pour savoir qui en a la souveraineté. Les pays qui bordent l’Arctique – Russie, États-Unis (Alaska) et Danemark – en revendiquent une partie. Le passage du Nord-Ouest, série de voies d’eau qui traversent l’archipel, est maintenant libre de glace et plusieurs pays soutiennent que c’est une voie d’eau internationale alors que le Canada dit que c’est une voie intérieure.

Les questions relatives à l’Arctique dépassent le politique. Le Projet sur le Nord canadien, ressource pédagogique en ligne de TEACH/LE PROF, les étudie sous plusieurs angles : citoyenneté, diversité, multiculturalisme, gouvernance. Visitez [www.teachmag.com/lpnc](http://www.teachmag.com/lpnc) pour avoir des plans de leçons, un roman dessiné (en anglais), un sommet de la jeunesse en ligne et autres outils pédagogiques.

À la rubrique Le futur, Richard Worzel aborde le sujet de l’Arctique canadien. La découverte des problèmes réels permet aux élèves d’élargir leurs perspectives.

L’article de fond porte sur le changement de la nature du jeu. Les aires de jeu naturelles ou avec objets divers offrent des possibilités d’activités non structurées et interactives rares dans les aires structurées classiques. Elles sont aussi plus sûres, les adultes ne faisant que surveiller, laissant libre cours à l’imagination des enfants.

Nous vous souhaitons une année 2011 très positive, avec tous nos vœux de réussite pour orienter vos élèves au cours de la nouvelle décennie.

Lisa Tran, rédactrice adjointe

# TEACH

M A G A Z I N E

Publisher / Editor:  
Wili Liberman

Assistant Editor:  
Lisa Tran

Contributing Writers:  
Martha Beach, Richard Worzel

Art Direction:  
Vinicio Scarci

Design / Production:  
Studio Productions

Circulation:  
Susan Holden

Editorial Advisory Board:  
John Fielding  
*Professor of Education,  
Queen’s University (retired)*

John Myers  
*Curriculum Instructor,  
Ontario Institute for Studies in Education/  
University of Toronto*

Rose Dotten  
*Directory of Library and Information Services,  
University of Toronto Schools (Retired)*

[www.teachmag.com](http://www.teachmag.com)

TEACH is published by 1454119 Ontario Ltd. Printed in Canada. All rights reserved. Subscriptions are available at a cost of \$18.95 plus \$1.14 GST including postage and handling by writing our office, 87 Barford Rd Toronto, ON, M9W 4H8 E-mail: [info@teachmag.com](mailto:info@teachmag.com)

T: (416) 537-2103, F: (416) 537-3491. Unsolicited articles, photographs and artwork submitted are welcome but TEACH cannot accept responsibility for their return. Contents of this publication may be reproduced for teachers’ use in individual classrooms without permission. Others may not reproduce contents in any way unless given express consent by TEACH. Although every precaution is taken to ensure accuracy, TEACH, or any of its affiliates, cannot assume responsibility for the content, errors or opinions expressed in the articles or advertisements and hereby disclaim any liability to any party for any damages whatsoever. Canadian publication mail sales product agreement No. 195855. ISSN No. 1198-7707.

Richard Worzel, C.F.A.

## The Law of Unexpected Consequences: A Better Way of Learning

**E**lsewhere in this issue is a discussion on Arctic sovereignty, which is interesting, but it's only a small part of a much bigger issue that can be approached from the point of view of politics, economics, geology, climatology, and many other subjects. In the real world, subjects overlap, and taking a broader view of issues will provide greater motivation for students (and teachers) to pursue different aspects of their education and not view subjects in chopped-up blocks divorced from each other. Let me, then, widen the issue of Arctic sovereignty into that broader discussion.

First, the only reason why Arctic sovereignty is (pardon me) a hot topic is because climate change is opening up the Northwest Passage, and making the Arctic much more accessible. When the Arctic was ice-locked, and deemed likely to stay so, it was considered a wasteland, and of interest only to the First Nations peoples and those others that lived there. But now it seems pretty clear that the Earth's climate is changing, and that is making the Arctic much more interesting for many reasons. To see this, let's now shift the focus to climate change.

There are some quibbles among the majority of scientists, and a great deal of uncertainty about the long run, but if you look at what's happening, it's not hard to see that climate is, in fact, changing. The changes evident range from extreme cold and unusual snowfalls in Great Britain and northern Europe, to both warming and cooling in Antarctica, to melting ice roads and permafrost in the Canadian Arctic. Climate change deniers will say that it's too early to be able to tell if anything's happening, that even if something is happening that climate changes naturally all the time.

But let's skip the controversy, and assume that climate change is happening, and that it's too late to stop it now (which I happen to believe). That doesn't mean we should do nothing because the steps we take now may have a lot to do with how severe the changes are ultimately—say, the difference between a light sunburn and a potentially fatal sunstroke. What I'd like to focus on is why the future is so difficult to predict, using Arctic sovereignty and climate change as examples.

If we follow the consensus among climate change

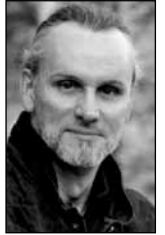
modelers, we should be expecting about a two-degree (all temperatures in Celsius) increase in global temperature this century. This will probably mean warmer oceans, higher sea levels, more rain in some places, more drought in others, more severe storms in both winter and summer, and significant shifts in growing seasons in all agricultural areas. But let's think the changes through, because it's often not the primary effects that are most significant, but the secondary, tertiary, or further downstream effects that are critical.

If we look at Canada, what would climate change mean to us? First, it means the Northwest Passage is unblocked and becomes a shorter way

**“The Canadian Prairies are one of the great breadbaskets of the world. The rapidly developing countries like China, India, and so on, are seeing big increases in standard of living. This, in turn, means their people will eat more and better food, which means the demand for food will rise. That's good for Canadian farmers. If climate does warm in Canada, farmers could see longer growing seasons, which would mean better crops and a wider range of them. ”**

to get from Europe to coastal cities of East Asia by ship. It raises political tensions between the United States (which claims that the NW Passage is an international waterway, and therefore open to all nations) and Canada (which claims it is a domestic waterway). This issue has already raised tensions between all Arctic nations (Canada, Russia, America, Denmark, and the other Nordic countries), sparking a land rush to claim potential natural resources under the clearing Arctic Ocean. It puts Canada in a much more combative geopolitical position, both with more potential bargaining chips, and more potentially adversarial situations for which we are not well prepared.

Next, let's look at agriculture. The Canadian



## FUTURES

Prairies are one of the great breadbaskets of the world. The rapidly developing countries like China, India, and so on, are seeing big increases in standard of living. This, in turn, means their people will eat more and better food, which means the demand for food will rise. That's good for Canadian farmers. If climate does warm in Canada, farmers could see longer growing seasons, which would mean better crops and a wider range of them.

Yet, it's not all good news. First, climate change may also shift rain and snowfall patterns. The Prairies are marginal farmland because they are so arid. It's only because they get just enough moisture at just the right times of year that they can be as productive as they are. If precipitation patterns shift, the Prairies might become less productive instead of more. For example, in 2010, it rained long and hard during early Spring in some parts of the Prairies, which made the ground too soft and damp to plant, cut the growing season for many farmers significantly, and led to lower yields for many farmers, or even a complete loss of crops.

Warmer climate also means more pests. Fewer insects will die off during the less-harsh winters and new insects, coming from warmer climates, will move in and are more difficult to eradicate. Warmer temps will also mean more plant diseases, parasites, and rusts, that again, complicate matters.

Increased productivity for farmers will result in increased competition for their crops and may cause political strife in Canadian politics, pitting farmers and farming provinces against consumers and consuming provinces because of the price of food.

Meanwhile, those people who live in the high Arctic may have to abandon their homes. Summer permafrost is melting in many places and the ice roads that are vital to resupplying northern communities during the winter are thawing earlier and freezing later. This means that fewer supplies can make it into the north before such communities are isolated by spring and summer weather. Will southern Canadians, who have a long history of ignoring northern Canadians, be willing to help them? Does Arctic sovereignty only apply to international relations? Here, again, is a political issue arising out of a climatic one.

If water levels rise, how will that affect Canada's coastlines like those in St. John, Halifax, Vancouver, and Victoria? And on the West Coast, where the potential for a truly significant earthquake is already high, will rising ocean levels put more pressure on the faults below and trigger more, or bigger quakes?

Speaking of oceans, warmer oceans mean lots of things. They probably mean fewer, but bigger hurricanes, inflicting damage on coastal communities more frequently (including the Atlantic provinces, as happened in 2010). Higher ocean temperatures also mean coral colonies are dying off and new ones forming in places farther away from the Equator. They may even mean a collapse of the food chain in the oceans and that could be really bad news for all life on Earth. (We really don't know.)

Warming oceans may also mean that the United Kingdom and Northern Europe revert their climates. Remember that London is on roughly the same latitude as James Bay, and without the warming effects of the Gulf Stream, it would be substantially colder. But

the runoff from melting Greenland glaciers, and the rapidly disappearing North Polar ice cap is pouring cold, fresh water down the Labrador Strait into the North Atlantic, slowing the flow of the Gulf Stream and diluting it. It is not clear that this is causing the recent colder, snowier winters in Europe, but it may well be a contributing factor. Geological history suggests that the Gulf Stream has been disrupted in the past, producing significant changes in the climate of northern Europe.

Now, if the United Kingdom and northern Europe's climate becomes radically colder, think of how dramatically that will change the economies of these countries and shift the geopolitics of the world.

But the final possibility I'd like to explore is extreme climate change. There is some thought that the last ice age of about 12,000 years ago was triggered by global warming. Some geologists believe that the patterns of climate change we're seeing now are similar to those that preceded the two most recent ice ages. Suppose that climate change leads to a domino effect that dumps us back into another ice age. The consequences would be far more profound than that of global warming.

When you consider that at the height of the last ice age, most of Canada was covered in three kilometers or more of ice, it would virtually wipe us out as a nation. Fortunately, this view is still very much in the minority, and must be considered a very low probability.

There is much, much more on which we could ponder about the unexpected, or downstream, consequences of climate change. Arctic sovereignty is one of them, but there are many others. But more than any single issue, exploring this topic clearly illustrates that learning about the real world, as opposed to keeping knowledge carefully tucked in separate little boxes, leads to far better and wide-ranging insights, and makes subjects far more absorbing.

*Richard Worzel is Canada's leading futurist, and speaks to more than 20,000 people a year. He volunteers his time to speak to high school students for free. Contact him at [futurist@futuresearch.com](mailto:futurist@futuresearch.com).*

## ADVERTISERS INDEX

ADVERTISER .....	PAGE#
1 Epson .....	2
2 Explorica .....	Insert
3 Financial Consumers Agency of Canada .....	23,24
4 Nestle .....	22
5 Richard Worzel .....	10

Richard Worzel, C.F.A.

## La loi des conséquences imprévues, ou une meilleure façon d'apprendre

**D**ans un autre article de ce numéro, on parle de la souveraineté dans l'Arctique, ce qui est intéressant mais ne présente qu'un aspect d'une question beaucoup plus importante que l'on peut aborder sous divers angles : celui de la politique, de l'économie, de la géologie, de la climatologie et de bien d'autres. Dans la vie, les sujets se recoupent, et considérer les problèmes d'un point de vue plus large motivera davantage les élèves (et les professeurs) pour développer différents aspects de leur éducation et ne pas considérer les matières comme des blocs découpés indépendants les uns des autres. Alors justement, permettez-moi d'élargir cette discussion sur la question de la souveraineté dans l'Arctique.

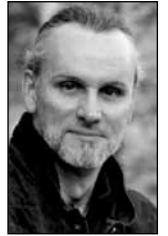
D'abord, l'unique raison pour laquelle cette souveraineté devient un sujet brûlant – si je puis dire – c'est le changement climatique car il ouvre le passage du Nord-Ouest et rend l'Arctique beaucoup plus accessible. Lorsque l'Arctique était bloqué par les glaces – et semblait devoir le rester – on le considérait comme une terre désolée qui n'avait d'intérêt que pour les Premières Nations et les quelques autres peuples qui y vivaient. Mais il est maintenant évident que le climat change, et cela rend l'Arctique beaucoup plus intéressant pour de nombreuses raisons. Pour que cela soit clair, examinons plus précisément cette question du changement climatique.

Certains scientifiques ratiocinent et le long terme est marqué d'incertitude, mais si l'on regarde ce qui se passe, une chose est certaine : le climat est en train de changer. Il n'est que de voir les chutes de neige et les froids extrêmes inhabituels en Grande-Bretagne et en Europe du Nord, le réchauffement et le refroidissement en Antarctique, la fonte des routes de glace et du pergélisol dans l'Arctique canadien. Ceux qui nient le changement climatique diront qu'il est trop tôt pour affirmer qu'il se passe vraiment quelque chose – si c'est même le cas – étant donné que le climat change constamment et de façon tout à fait naturelle.

Mais laissons la controverse de côté. Considérons que le changement climatique est une réalité et qu'il est maintenant trop tard pour l'arrêter (il se trouve que c'est ce que je pense). Cela ne veut pourtant pas dire que nous ne devons rien faire, car les mesures que nous prenons maintenant peseront énormément sur la gravité des changements, qui transformerait un léger coup de soleil en une insolation potentiellement mortelle. À partir de

l'exemple de la souveraineté dans l'Arctique et de celui du changement climatique, j'aimerais approfondir les raisons pour lesquelles il est si difficile de prévoir l'avenir.

D'après le consensus auquel sont parvenus les modélisateurs du changement climatique, la température globale de la planète au cours de ce siècle devrait augmenter d'environ 2 ° (tout est ici exprimé en Celsius). Ceci va probablement vouloir dire un réchauffement des océans, une élévation du niveau des mers, une pluviosité plus importante en certains lieux et davantage de sécheresse



**Considérons maintenant l'agriculture. Les Prairies canadiennes sont l'un des plus grands greniers du monde. Les pays en rapide développement, tels que la Chine, l'Inde, enregistrent une énorme augmentation de leur niveau de vie. Leurs populations mangent donc davantage et mieux, créant ainsi une plus grande demande d'aliments. Bonne chose pour les agriculteurs canadiens, peut-être. Si le climat se réchauffe au Canada, ces agriculteurs verront des périodes de végétation plus longues, ce qui pourrait signifier des récoltes meilleures et plus diversifiées.**

dans d'autres, des tempêtes plus violentes en hiver comme en été, et une modification notable des périodes de végétation dans toutes les régions agricoles. Mais étudions le changement plus à fond car, souvent, ce ne sont pas les effets primaires qui sont les plus critiques, mais bien les effets secondaires, tertiaires ou plus en aval encore.

Prenons l'exemple du Canada. Que signifie le changement climatique pour les Canadiens ? Tout d'abord, il signifie que le passage du Nord-Ouest est désormais ouvert et devient un raccourci maritime entre l'Europe et les villes côtières de l'est de l'Asie. Cela soulève des tensions politiques entre les États-Unis (qui allèguent que le passage du Nord-Ouest est une voie d'eau internationale et, partant, ouvert à tous les pays) et le Canada (qui, lui, allègue qu'il s'agit d'une voie intérieure). Cette question a déjà créé des tensions entre les nations arctiques (le Canada, la Russie, l'Amérique, le Danemark et les autres pays nordiques), suscitant très vite des revendications territoriales eu égard à d'éventuelles ressources naturelles dans un océan Glacial Arctique... libre de glace. Le Canada est ainsi dans une position géopolitique beaucoup plus combative avec, potentiellement, à la fois davantage de monnaies d'échange et de situa-

tions conflictuelles pour lesquelles il n'est pas prêt.

Considérons maintenant l'agriculture. Les Prairies canadiennes sont l'un des plus grands greniers du monde. Les pays en rapide développement, tels que la Chine, l'Inde, enregistrent une énorme augmentation de leur niveau de vie. Leurs populations mangent donc davantage et mieux, créant ainsi une plus grande demande d'aliments. Bonne chose pour les agriculteurs canadiens, peut-être. Si le climat se réchauffe au Canada, ces agriculteurs verront des périodes de végétation plus longues, ce qui pourrait signifier des récoltes meilleures et plus diversifiées.

Pourtant, tout cela n'est pas uniquement synonyme de bonnes nouvelles. D'abord, parce que le changement climatique risque aussi d'entraîner des modifications de la pluviosité et de la niviosité. Les Prairies sont des terres agricoles marginales parce qu'elles sont très arides. Ce n'est que parce qu'elles enregistrent juste assez d'humidité aux bons moments de l'année qu'elles peuvent produire autant. Si les précipitations se modifient, les Prairies pourraient devenir *moins* productives et non pas *plus*. Ainsi, en 2010, dans certaines régions des Prairies, de nombreuses et fortes pluies au début du printemps ont rendu le sol trop mou et humide pour la plantation; dans de nombreux cas, la période de végétation s'est ainsi trouvée considérablement raccourcie, ce qui a entraîné un rendement moindre, voire une perte totale des récoltes.

Un climat plus chaud signifie également davantage d'animaux nuisibles. Moins d'insectes mourront durant des hivers moins rigoureux et, venant de climats plus doux, de nouveaux insectes apparaîtront qui seront plus difficiles à éradiquer. Des températures plus chaudes signifieront aussi davantage de maladies des plantes, de parasites et de rouilles, ce qui, là encore, complique les choses.

Une meilleure productivité entraînera une concurrence accrue entre les agriculteurs pour les récoltes, ce qui risque de déclencher des conflits dans la politique canadienne, opposant les agriculteurs et les provinces agricoles aux consommateurs et aux provinces consommatrices en raison du prix des aliments.

Dans l'intervalle, les peuples qui vivent dans le Grand Nord risquent d'avoir à abandonner leurs maisons. En de nombreux endroits, le pergélisol d'été fond et les routes de glace, essentielles pour ravitailler les agglomérations du Nord durant l'hiver, fondent plus tôt et gèlent plus tard. Cela veut dire que moins de provisions parviendront jusque dans le Nord avant que ces localités ne soient isolées au printemps et en été en raison du temps. Les Canadiens du Sud qui ont montré à maintes et maintes reprises qu'ils ignoraient les Canadiens du Nord seront-ils prêts à les aider ? La souveraineté dans l'Arctique ne s'applique-t-elle qu'aux relations internationales ? Ici encore, c'est un problème politique qui se trouve soulevé par une question climatique.

Si le niveau de l'eau monte, comment cela va-t-il affecter les côtes canadiennes dans des villes comme Saint-Jean (Terre-Neuve), Halifax, Vancouver et Victoria ? Et sur la côte ouest, où le risque d'un tremblement de terre important est déjà grand, l'élévation du niveau de l'océan va-t-elle exercer une pression encore plus forte sur les failles sous-marines et déclencher des secousses telluriques plus nombreuses ou plus violentes ?

Quant aux océans, leur réchauffement aura de nombreux effets. Cela signifie sans doute des ouragans moins nombreux mais plus dévastateurs, infligeant plus souvent des dégâts aux villes côtières (y compris dans nos provinces atlantiques, comme cela s'est produit en 2010). Cela signifie également la mort de colonies de corail et la formation de nouveaux récifs dans des lieux plus éloignés de l'équateur. On pourrait même enregistrer un effondrement de la chaîne alimentaire océanique, ce qui pourrait être une très mauvaise nouvelle pour toute la vie sur Terre. (En réalité, nul ne sait vraiment.)

Un réchauffement des océans risque aussi de voir le climat du Royaume Uni et de l'Europe du Nord s'inverser. Il ne faut pas oublier que Londres est sensiblement à la latitude de la baie James et que, sans les effets thermiques du Gulf Stream, la capitale britannique serait beaucoup plus froide. Mais le ruissellement provenant de la fonte des glaciers du Groënland et la rapide disparition de la calotte polaire apportent de l'eau douce et froide dans l'Atlantique Nord via le détroit du Labrador, ralentissant le Gulf Stream et le diluant. Il n'est pas certain que ce soit la cause des récents hivers plus froids et plus enneigés en Europe, mais le réchauffement des océans pourrait bien y contribuer. Dans l'histoire géologique, le Gulf Stream s'est déjà trouvé contrarié, entraînant des changements climatiques importants en Europe du Nord.

Maintenant, si le climat du Royaume Uni et de l'Europe du Nord se refroidissait radicalement, pensons aux changements spectaculaires que pourraient connaître l'économie de ces pays et la géopolitique mondiale.

Mais la dernière possibilité que j'aimerais étudier est un changement climatique extrême. Selon certaines théories, la dernière période glaciaire d'il y a environ 12 000 ans aurait été déclenchée par un réchauffement de la planète. Certains géologues estiment que les signes du changement climatique que nous observons actuellement sont semblables à ceux qui précédaient les deux dernières périodes glaciaires. Supposons que le changement climatique entraîne un effet domino qui nous projette dans une autre période glaciaire. Les conséquences seraient beaucoup plus graves que celles du réchauffement de la planète.

Si l'on pense qu'au plus fort de la dernière période glaciaire, le Canada était en majeure partie recouvert d'au moins trois kilomètres de glace, une nouvelle période glaciaire nous raierait de la carte. Heureusement, cette perspective n'est encore surtout que celle d'une minorité et doit être considérée comme très peu probable.

On peut réfléchir davantage, bien davantage, aux conséquences du changement climatique, qu'elles soient imprévues ou en aval. La souveraineté dans l'Arctique est un domaine ; il y en a beaucoup d'autres. Toutefois, plus que n'importe lequel, l'étude de ce problème montre clairement qu'étudier ce qui se passe dans la réalité – au lieu de caser soigneusement les connaissances dans de petites boîtes individuelles – permet d'élargir la vision et la compréhension des choses et de rendre les sujets plus passionnants.

*Richard Worzel est un futurologue canadien éminent et l'un des orateurs les plus demandés dans ce domaine. Il donne bénévolement de son temps pour dialoguer avec des élèves du secondaire, selon ses disponibilités. Vous pouvez le rejoindre à [futurist@futuresearch.com](mailto:futurist@futuresearch.com).*





On a warm fall afternoon, a group of children run around McCleary Playground, located in Toronto's Leslieville. McCleary sits just south of busy Queen Street East, on a quiet residential street. The ground is covered in soft grass and wood chips; logs, boulders, and saplings fill the small, gated area. Children scamper through trees with squirrels. They scramble over boulders and clamber to be the first to climb a pile of logs. Two children play on the logs for 10 minutes before they even notice a bright orange slide. They take a couple slides each, but soon enough they start pretending it is a train.

This leafy playground is part of a new trend. It is a natural playground, made of pathways, trees, shrubs, logs, and boulders from the Canadian Shield. The only piece of traditional equipment is the slide. There are no swings, monkey bars or teeter-totters, and no bright colours—nothing constructed of plastic or metal.

Natural playgrounds are one example of our changing approach to play. Over the past decade, experts have identified many problems with traditional play equipment and overly structured toys. New toy and park designs help children learn and develop without adults. Not all parents know about non-structured playgrounds, many communities cannot afford them, and many appreciate the standard playground with structured equipment.

Structured playgrounds were installed across the country just over a decade ago, and only benefit gross motor skills. They have a single focus; a small platform with a slide and a climbing wall attached and they are not accessible to all children. They are built for the child who is already physically and mentally developed. Structured playgrounds only allow for prescribed play—play that is essentially dictated by the limited possibilities of the equipment—in the same way that structured toys only have a single use.

Decreasing adult intervention is the first step in moving away from structured play. “Open-ended play allows students to inte-

## THE CHANGING NATURE OF PLAY

By Martha Beach

ract with each other and not with adults,” says Michael Martins, a Physical Education teacher at the Ontario Institute for Studies in Education's (OISE) Institute of Child Study at the University of Toronto. New designs may be successful in changing a child's behaviour, but adult behaviour is what needs to change. “Adults have a bad habit of thinking they know best,” says Adam Bienenstock, owner and founder of Bienenstock Natural Playgrounds. Parents tend to hover and structure games for kids. Which is why there is, ironically, a natural playground in the middle of High Park, located in downtown Toronto. “There's a fear to let them roam,” Bienenstock says.

There is however, a clear difference between adult intervention and adult supervision. The changing nature of play means that adults need not intervene or assist in games and activities, for example, ensuring children do not climb on high railings or pushing younger children on a swing set. At the same time, children at these new playgrounds still require supervision. Fortunately, the new play structures do not feature high platforms, long slides, or monkey bars, meaning fewer opportunities for injury and less scrutinous supervision is required from teachers and parents. These factors will contribute to more independent play by children.

Letting kids play by themselves helps them learn. “Unstructured play and interactive play helps problem-solving skills,” says Martins. Open-ended play works on a child's social skills, co-operative development, creative ambition and imagination. Leave kids to work and play by themselves, and they will learn how to resolve problems.

Aside from the educational benefits, new designs have demonstrated improvements, such as, durability, when compared to traditional structures. Metal equipment eventually wears out, rusts or breaks. “Boulders won't give out,” says Bienenstock. Plus, non-prescribed equipment is versatile. “You put in a boulder and it's a car, or a locomotive, or a ship,” says Bienenstock. “If you give them a plastic and steel car, once that's done, that's done.” The real value

## THE CHANGING NATURE OF PLAY

shows during the winter months. A traditional structure provides little in the winter, whereas children can still build with loose objects on boulders, hills, and logs even when there's ice, slush, and snow covering the ground.

Three playground designs have proved to be popular: natural playgrounds, loose object play, and equipment that puts the focus on fine motor skills. Experts first identified the problems and designers, architects, and child specialists followed with the solutions. Now communities must choose which approach to open-ended play is best.

Natural playgrounds are multi-focus and open. "You have as many options as there are opportunities in nature," says Bienenstock. Today, many children do not have many opportunities to learn outside. "It's an amazing, missed opportunity," says Nate Habermeyer who works at Evergreen, a foundation that coordinates with communities and schools to help connect cities and nature. Natural playgrounds leave options for kids to play, learn, and develop. There are no platforms or stairs so that children with physical and mental disabilities can also play. "If you have to do just one thing, plant a great big tree," says Bienenstock. Adding a boulder, a log, large shrubs, and pathways, also lead children to explore nature.

Another way that children can explore is through loose object play. It, too, is multi-focus and open-ended just like natural playgrounds, but loose object playgrounds take a different approach. They have different building materials like boxes, crates, a-frames, pieces of wood, planks and even giant foam building blocks, but no climbing structures. Children build their own play space. In New York, several have been built in the last few years, like the newly renovated Brooklyn Bridge Park and Imagination Playground. At the end of the day, employees at the American loose object playgrounds lock everything in a shed until the next day. Any child can play in a loose-object environment. Children work together to build their play space and to solve complications they encounter.

Recently, manufacturers have also tried to create open-ended

and skill-building structures. They have designed equipment that fire a child's imagination and fine motor skills. Evos Play System is a new line of equipment designed by Landscape Structures, a Minnesota-based company. Greenfield School in Edmonton had some installed last year. Evos Play System has no prescribed points of entry or exit and to climb the equipment, children need to use their muscles and minds. Evos equipment is accessible from ground level, though much of it involves climbing, making it inaccessible to some children.

Open-ended equipment like Evos could become more popular because not everyone agrees that structured playgrounds are bad. "I don't think prescribed equipment is a bad thing. Good can come from both. Allowing students to make things what they will is the important thing," says Martins. "So long as it's offering a challenge to the children, it's a good thing. To have students be more active and to interact one-on-one is great." The key is balance. "There's a difference between prescriptive and suggestive," Bienenstock says. Providing tools to create play is suggestive; play becomes whatever the child imagines. Martins agrees. "Offering students the material to make play what they will is really important," he says.

Combining old equipment with new concepts can rejuvenate a play area. The cost of a new, innovative playground is still more than most communities can shoulder. When a community, school or group can't afford a new playground, the Evergreen Foundation steps in as a facilitator and helps with fundraising. New equipment could cost roughly \$20,000, \$50,000 or a million dollars, says Bienenstock. But so could a natural playground. Any type of playground takes time and money to design, build, and install. The more complicated the design, the greater the number of regulations to follow. The costs mount up when designs meet stated regulations as determined by the Canadian Standards Association, requiring more time and skill. "The adult nonsense and regulatory things are expensive," says Bienenstock, but he does believe the money is worth it. "How do you assess the value of play?" Bienenstock says value should be attributed according to the amount of time that the playground is used; picking structures that stand the test of time is always worth the money.

Natural playgrounds, loose objects, and play equipment like the Evos Play System are all innovative and open-ended solutions to the problem of structured play. "For kids, their work is play," says Bienenstock, "That is how they learn." New designs are helping to change our approach to the way children play. Open-ended playgrounds and non-structured toys are becoming more popular. But they are new solutions to an old problem. We do not know which type of new playground or what kind of new expensive toy will turn out to be the best option in the long run. All we know is that much of children's lives are structured. Now we need to back up and let them play, experience the world by themselves, learn new things without the help of adults and, most importantly, have fun.

*Martha Beach is a journalism student streaming into the magazines industry at Ryerson University in Toronto. Her experience includes feature writing, lifestyle pieces, copy editing, and fact checking.*





## Le jeu change de nature

Martha Beach

Par un doux après-midi d'automne, quelques enfants courent dans l'aire de jeu McCleary, dans le quartier de Leslieville à Toronto. McCleary se trouve juste au sud de la rue Queen est, très passante, dans un quartier résidentiel tranquille. Herbe et copeaux de bois couvrent le sol ; troncs, rochers, arbustes sont répartis dans ce petit enclos. Les enfants gambadent entre les arbres au milieu des écureuils, grimpent sur les rochers et se hissent pour être les premiers en haut de troncs empilés. Deux enfants jouent là pendant une dizaine de minutes avant de remarquer un toboggan orange vif ; après deux glissades chacun, ils décident de s'en servir pour jouer au train.

Cette aire de jeu arborée marque une nouvelle tendance. Il s'agit d'une aire naturelle constituée d'allées, d'arbres, de buissons, de troncs et de rochers du Bouclier canadien. Le seul élément traditionnel est le toboggan. Pas de balançoires, pas de cages à poules ni de bascules, et pas de couleurs vives — rien en plastique ni en métal.

Les aires de jeu naturelles sont un exemple d'un changement de conception du jeu. Au cours des dix dernières années, des spécialistes ont relevé de nombreux problèmes avec le matériel ludique classique et les jouets trop structurés. Selon la nouvelle conception des jouets et des parcs, les enfants apprennent et se développent en dehors des adultes. Tous les parents ne connaissent pas les aires de jeu non structurées ; beaucoup de collectivités n'ont pas les moyens d'en avoir et nombreuses sont celles qui préfèrent les aires ordinaires équipées d'éléments structurés.

Dans tout le pays, on installe depuis dix ans des aires de jeu structurées qui ne favorisent que la motricité globale. Ces aires sont pensées pour une seule utilisation : une petite plateforme avec un toboggan et un mur d'escalade non accessibles à tous les enfants. Elles sont construites pour l'enfant déjà physiquement et mentalement développé. Les aires de jeu structurées ne permettent qu'un type de jeu fixé à l'avance, dicté essentiellement par les limites de l'équipement — de même que les jouets structurés n'ont qu'une seule utilisation.

Diminuer l'intervention de l'adulte est la première étape pour s'éloigner du jeu structuré. « Le jeu ouvert permet aux élèves d'interagir les uns avec les autres, et non pas avec des adultes », précise Michael Martins, professeur d'éducation physique à l'Institut d'étu-

des de l'enfant, rattaché à l'Institut d'études pédagogiques de l'Ontario/Université de Toronto (IEPO/UT). De nouvelles conceptions peuvent réussir à changer le comportement de l'enfant, mais c'est le comportement de l'adulte qu'il faut changer. « Les adultes ont la fâcheuse habitude de penser qu'ils savent mieux que personne », dit Adam Bienenstock, propriétaire et fondateur de *Bienenstock Natural Playgrounds*. Les parents ont tendance à rester autour et à structurer les jeux pour les enfants. Et c'est pourquoi il y a — ô ironie — une aire de jeu naturelle au milieu de High Park, en plein cœur de Toronto. Selon Adam Bienenstock, « on craint de les laisser aller et venir à leur guise ».

Il existe pourtant une nette différence entre intervenir et surveiller. Le changement de nature du jeu veut dire que les adultes n'ont besoin ni d'intervenir ni d'aider dans les jeux et les activités, s'ils s'assurent simplement que les enfants ne montent pas sur des rampes élevées ni ne poussent des plus jeunes sur une balançoire. Ceci dit, les enfants qui viennent dans ces nouvelles aires de jeu ont néanmoins besoin d'être surveillés. Heureusement, les nouvelles structures ludiques ne comportent ni hautes plateformes, ni longs toboggans, ni cages à poules, ce qui signifie moins d'occasions de se blesser et, partant, moins de surveillance étroite de la part des enseignants ou des parents. Tout ceci contribue à des jeux plus indépendants pour les enfants.

Laisser les enfants jouer tout seuls stimule leur apprentissage. « Le jeu non structuré et interactif permet d'apprendre à résoudre les problèmes », dit M. Martins. Le jeu ouvert développe la sociabilité de l'enfant, son esprit de coopération, son ambition créative et son imagination. Lorsqu'on laisse les enfants travailler et jouer par eux-mêmes, on leur permet d'apprendre à trouver des solutions.

Mis à part leurs avantages sur le plan pédagogique, les nouvelles conceptions sont mieux que les structures classiques, notamment en termes de durabilité. Le matériel en métal finit toujours par s'user, rouiller ou se casser. « Les rochers, c'est du solide », précise Adam Bienenstock. Par ailleurs, le matériel non prescrit est polyvalent. « Vous mettez un rocher, il devient une voiture, une locomotive ou un bateau », ajoute-t-il. « Avec une voiture en plastique ou en métal, une fois qu'elle est cassée, c'est terminé. » Ce sont les mois d'hiver

qui en révèlent la véritable valeur. Avec une structure classique, en hiver, les enfants ne peuvent pas faire grand-chose, alors que s'ils disposent d'objets divers, ils peuvent encore faire de la construction sur les rochers, les hauteurs et les troncs, même si le sol est gelé, mouillé ou couvert de neige.

Trois conceptions d'aires de jeu ont retenu l'attention : les aires naturelles, les aires avec objets divers et les équipements centrés sur développement de la motricité fine. Les spécialistes ont d'abord relevé les aspects à développer, puis les concepteurs, les architectes et les spécialistes de l'enfance ont proposé des solutions. C'est maintenant aux collectivités de trouver la meilleure démarche pour aborder le jeu ouvert.

Les aires de jeu naturelles sont ouvertes et ont de multiples champs d'application. Adam Bienstock considère qu'il y a autant d'options que de possibilités offertes par la nature. De nos jours, beaucoup d'enfants n'ont guère l'occasion d'apprendre à l'extérieur. « Quel dommage de manquer une telle occasion ! », ajoute Nate Habermeyer qui travaille à Evergreen, fondation assurant une coordination entre les collectivités et les écoles dans le but de resserrer le lien entre les villes et la nature. Les aires de jeu naturelles offrent aux enfants des occasions de jouer, d'apprendre et de se développer. Puisqu'il n'y a ni plateformes ni escaliers, les enfants ayant un handicap physique ou mental peuvent y jouer. « Si vous ne devez faire qu'une chose, dit Adam Bienstock, plantez un beau gros arbre. » L'ajout d'un rocher, d'un tronc d'arbre, de gros buissons et d'allées amène aussi les enfants à explorer la nature.

Une autre façon d'explorer pour les enfants se fait par les aires avec objets divers, qui tout en étant ouvertes et avec des applications multiples, comme les aires de jeu naturelles, proposent néanmoins une démarche différente. Elles comportent différents matériaux permettant de construire, tels que des boîtes, des caisses, des cadres en forme de A, des morceaux de bois, des planches et même d'énormes blocs de polystyrène, mais aucune structure à escalader. Les enfants construisent leur propre espace ludique. Plusieurs ont été construites à New York au cours des dernières années, comme le *Brooklyn Bridge Park* et l'*Imagination Playground*, tout récemment rénovés. En fin de journée, les employés (américains) des aires avec objets divers enferment tout dans un abri jusqu'au lendemain. N'importe quel enfant peut jouer dans un tel environnement. Ensemble, les enfants construisent leur espace et trouvent des solutions aux difficultés qu'ils rencontrent.

Récemment, les fabricants ont aussi essayé de créer des structures ouvertes qui permettent d'acquérir des techniques de construction. Ils ont conçu du matériel qui stimule l'imagination de l'enfant et développe sa motricité fine. Evos est une nouvelle ligne d'équipement ludique créée par *Landscape Structures*, entreprise du Minnesota. À Edmonton, l'école Greenfield a installé quelques-unes de ces structures l'an dernier. Les structures ludiques Evos n'ont aucun point d'entrée ou de sortie fixé, et pour y grimper, les enfants doivent à la fois réfléchir et faire travailler leurs muscles. Les équipements Evos sont accessibles à partir du sol, bien qu'un bon nombre nécessite de grimper, ce qui exclut certains enfants.

Les structures ouvertes comme celles d'Evos risquent d'avoir du

succès car tout le monde n'est pas d'accord sur les défauts des aires de jeu structurées. « Je ne crois pas que le matériel imposé soit une mauvaise chose. Les deux types ont du bon. L'important, c'est de permettre aux élèves de faire ce qu'ils veulent avec ce dont ils disposent », affirme Michael Martins. « Pour autant que les enfants ont un défi à relever, c'est positif. Faire en sorte que les élèves soient plus actifs et interagissent l'un avec l'autre est une très bonne chose. » L'essentiel, c'est l'équilibre. « Il existe une différence entre ce que l'on impose et ce que l'on suggère », ajoute Adam Bienstock. Procurer des outils pour créer des jeux est suggestif ; le jeu se développe en fonction de l'imaginaire de l'enfant. Michael Martins est d'accord : « Proposer aux élèves le matériel qui leur permette de faire du jeu ce qu'ils veulent est vraiment important ».

Allier le vieux matériel et les nouveaux concepts peut rajeunir une aire de jeu. Pour beaucoup de collectivités, le coût d'une aire de jeu innovante reste encore inabordable. Lorsqu'une collectivité, une école ou un groupe n'a pas les moyens de financer une nouvelle aire de jeu, la Fondation Evergreen intervient et organise une levée de fonds. Selon Adam Bienstock, un matériel neuf peut coûter 20 000 \$, 50 000 \$, voire un million de dollars. Mais il en est de même d'une aire de jeu naturelle. La conception, la construction et l'installation d'une aire de jeu de n'importe quel type exigent temps et argent. Plus la conception est sophistiquée, plus il y a de règlements à respecter. Les coûts s'envolent lorsque les conceptions doivent respecter la réglementation en vigueur établie par l'Association canadienne de normalisation, ce qui demande davantage de temps et de compétences. Adam Bienstock estime que le manque de bon sens des adultes et les règlements coûtent chers, mais il estime que le jeu en vaut la chandelle. Il pose la question : « Comment peut-on évaluer la valeur du jeu ? ». Pour lui, cette valeur doit être estimée en fonction du temps d'utilisation de l'aire en question. Dépenser de l'argent pour des structures qui passent le test du temps est toujours un bon investissement.

Les aires de jeu naturelles, les aires avec objets divers et les systèmes tels que ceux proposés par Evos offrent tous des solutions novatrices et ouvertes au problème du jeu structuré. « Le jeu, c'est le travail de l'enfant, affirme Adam Bienstock ; c'est sa façon d'apprendre. » Les nouvelles conceptions nous aident à modifier notre démarche vis-à-vis de la façon dont l'enfant joue. Les aires de jeu ouvertes et les jouets non structurés sont de plus en plus répandus. Mais ce sont des solutions nouvelles à un vieux problème. À long terme, nous ne savons pas quelle nouveauté – aire de jeu ou jouet onéreux – se révélera la meilleure. Tout ce que nous savons c'est que la majeure partie de la vie d'un enfant est structurée. Il faut maintenant prendre du recul et les laisser jouer, faire l'expérience du monde par eux-mêmes, apprendre des choses nouvelles sans l'aide des adultes et, ce qui est le plus important, s'amuser.

*Martha Beach est étudiante en journalisme à l'Université Ryerson de Toronto et elle s'oriente vers le secteur des magazines. Elle a à son actif des articles de fond et d'autres sur le mode de vie, du travail éditorial et de vérification de sources.*



# CURRICULA

---

## Lesson 4: Diversity and Canada's North

### Introduction:

Although historically isolated from the rest of the country, the North has nevertheless contributed in a powerful way to the Canadian sense of nation. Canada stretches from sea to sea to sea and Canadian citizens, no matter what part of the country they inhabit, have a bond with their fellow Canadians in the North that needs to be acknowledged and celebrated.

Students will reflect on their understanding of the concept of diversity and apply it to the issues surrounding Canada's North. They will try to view Canada's struggle for sovereignty in the North through the perspectives of various Canadian communities and evaluate its significance for them and for the nation. By participating in this activity, students will develop their thinking about Canada's identity as a nation of diverse peoples and how it is possible for issues, such as Canada's North, to unite citizens.

They will read the chapter in the graphic novel, *Project North: Canadian Sovereignty in the Arctic*, that describes what Alex and ZaZi learn about diversity and sovereignty in the North as they do their school project.

### Materials Required:

Computers with Internet access

Detailed map of Canada's North:

<http://maps.nationalgeographic.com/maps/atlas/north-america-geophysical.html>

Writing paper and utensils

*Project North: Canadian Sovereignty in the Arctic*

### Expectations/Outcomes:

#### Students will:

- Demonstrate an understanding of the beliefs and values underlying democratic citizenship and explain how they guide citizens' actions;
- Describe the diversity of beliefs and values of various individuals and groups in Canadian society;

**GRADE LEVELS: 9-12**

### Key Concepts and Issues:

Students will explore the concept of diversity and how it connects to issues surrounding Canada's North.

### Subject:

Diversity and Canada's North

### Curriculum Links

Social Studies, World History, World Geography

### Duration:

3 to 5 sessions

### Materials Required:

Internet access

Detailed map of Canada's North

Writing paper and utensils





- Analyze responses at the local, national, and international levels to civic issues that involve multiple perspectives and differing civic purposes;
- Compare the varied beliefs, values, and points of view of Canadian citizens on issues of public interest (e.g., freedom of information, censorship, health care funding, pollution, water quality, nuclear power, taxation, casinos, sovereignty in the North);
- Analyze Canadian issues or events that involve contrasting opinions, perspectives, and civic purposes (e.g., Canada's efforts to maintain sovereignty in the North);
- Describe how their own and others' beliefs and values can be connected to a sense of civic purpose and preferred types of participation (e.g., membership in political parties; participation in protest movements; financial or volunteer support for educational or community service programs; support for religious or ethnic charitable organizations).

### BACKGROUND

#### Step One: Teacher-Led Discussion

Remind students of the beliefs and values underlying democratic citizenship and explain how they guide citizens' actions. Have students discuss the concept of diversity as it applies to Canadian society. Explain how different groups (e.g., special interest groups, ethno-cultural groups) define their citizenship, and identify the beliefs and values reflected in these definitions. Have students share information, if they wish, about their own backgrounds, beliefs, and values.

Ask how diversity might co-exist with the values of democratic citizenship. Have students read on in Project North: Canadian Sovereignty in the Arctic.

#### Step Two:

Brainstorm a list of issues of public interest to Canadians (e.g., freedom of information, censorship, health care funding, pollution, water quality, nuclear power, taxation, casinos, military defense) and ask students what they know of the varied beliefs, values, and points of view that Canadian citizens might have on these issues.

Then, if they have not suggested it, mention Canada's sovereignty in the North as an issue of public interest. Tell them that in our society that celebrates diverse interests and points of view, different people might have varying perspectives on Arctic sovereignty. Ask students to discuss varied beliefs, values, and points of view of Canadian citizens on this issue (its importance and how it is to be achieved). They may vary in

- what it means to them
- their assessment of its importance to the country
- whether it should be important to more citizens (whether more Canadians should care about Arctic sovereignty) and if so, why

(If necessary, refer them back to Lessons 1 and 2 for an example of one perspective, the perspective of the Inuit peoples. Other groups with different perspectives could include local and regional authorities, NGOs promoting environmental protection, commercial interests (including large energy companies, fishing interests, shipping companies, tourist businesses), provincial and federal governments (which might also have interests in the energy companies), and government organizations, such as the Canadian Armed Forces. If you wish, have students read "Opinion: Canada and the Northwest Passage – Sovereignty versus Heritage," a January 2009 article which mentions different stakeholders and their perspectives.)

Use several or all of the following quotes to continue to stimulate discussion about different perspectives and the diversity of interests. (Either post them, circulate them on paper, or read them aloud.)

"Diplomacy may be cheaper than employing naval forces, but it will probably be inadequate. The demand for energy worldwide will continue and there will be shortages. The small and medium powers are likely the most at risk. ... Most small- and medium-sized coastal states are, therefore, not relying on diplomacy alone. ... In Canada and the United States, there are regular suggestions that the NORAD surveillance effort be extended into this region. In such cooperative endeavours, Canada must remember that one's voice is precisely proportional to the



strength of one's military contribution." – Eric Lehre, excerpt from *"Future Canadian Security Challenges and Some Responses,"* in *Canadian Naval Review*, Winter 2010

"From Canadians' point of view this is an opportunity that will never come again." – Ruth Jackson of the Geological Survey of Canada, in reference to Canada's opportunity to extend its territory further under its coastal waters by providing scientific evidence (that the formations are geologically connected to its mainland) to a United Nations commission by 2013

"It's our home. It's not some new frontier. It's not some new frontier just to be explored. This is our homeland. For us it's a way of life that we're protecting." – Sheila Watt-Cloutier, the Inuit activist who was nominated in 2007 for the Nobel Peace Prize

"The Arctic is rapidly becoming subject to plans involving shipping, expanded industry, and national security. While Canada appears to be gearing up for the challenge, will the traditionally docile Canadian population have the gumption to support the pursuit of the country's northern interests?" – Neil Hazan, lawyer, excerpt from *"Asserting Ourselves (in the Arctic),"* June 2009

"Arctic exploration and development will create needed economic opportunities for northern communities, help secure Canada's energy supply and provide an opportunity for Canada to clearly exercise its economic sovereignty over offshore natural resources." – Patricia Valladao, a spokeswoman for Canada's Department of Indian & Northern Affairs, 2007

"Canadians should stop worrying about our Arctic possessions and instead move forward in building an Arctic in which all exercise proper care in the enjoyment and exploitation of a shared environment. We should be aiming for co-operative stewardship as well as national sovereignty. Academics and others whom I call "purveyors of polar peril" have helped politicians and the media persuade us we have far greater sovereignty problems than we actually do. "Use it or lose it" typifies the misguided thinking of southerners who, removed from Arctic realities, seek to maintain remote control over the North.

Stewardship means locally informed governance that not only polices, but also cares for and respects, the natural environment and all living things in it, humans included. Stewardship cannot be done in isolation. In the Arctic it requires not only national but international cooperation. Leadership for co-operative stewardship should come from Northerners in Canada, from those who know the region best and are uniquely positioned to bring a cir-

cumpolar perspective to the politics of Canada's Arctic policies. We should come out of the shell of our concern for sovereignty and start to act like sovereigns. We need to join with others in the region and take care before it's too late for the Arctic." – Franklyn Griffith, professor emeritus of political science and George Ignatieff Chair emeritus of peace and conflict studies at the University of Toronto

"We could ... declare[e] the North the largest national park on Earth. Imagine a terrestrial and marine protected area encompassing the 3.5 million square kilometres of the Yukon, NWT, Nunavut and the waters that lie between the 60th parallel and the pole. ... The park's only restrictions on resource extraction would be on fossil fuels. Why? Because everyone knows climate change is undermining the ecology of the North, where the warming is three times the global average. What better way to signal our opposition to business-as-usual than making oil and gas reserves in the North off limits?"

According to the U.S. Geological Survey, 90 billion barrels of oil lie untapped north of the Arctic Circle. That's a 10th of known conventional reserves. More than 30 per cent of the world's undiscovered natural gas may be there too. Take it all away and everyone – especially the Russian and Danish diplomats now arguing with Canada over drilling rights to the Arctic Ocean's Lomonosov Ridge, northwest of Greenland – will take us seriously. They'll object, but at least Canada will be negotiating from the moral high ground. Indeed, transforming Canada's North into one big park may be the most powerful action we can take to address global warming." – James Hrynyshyn, a Canadian science journalist based in North Carolina

"It's been years since the North dominated headlines like it does today. Questions about sovereignty, resources, and national boundaries have all raised people's attention. But the nature of the debate, dominated by southern surprise that the North is of international importance, has revealed a paradox. Canada, though Northern, is not yet a truly Northern nation.

My greatest wish is for our country to realize the uniqueness of its North. ... [I]f Canada were a Northern nation, we'd never have endless debates about Arctic sovereignty. We don't obsess about the future of B.C. or ponder challenges to the geographical integrity of Manitoba. The North would have a permanent



place in the national fabric and would not be subject to cyclical interest and southern neglect.

To become a Northern nation, Canadians need to overcome their inherent bias against winter and cold, and move beyond mythology toward a sophisticated understanding of the North. The Arctic and Subarctic must cease to be foreign territories hidden by distance and climate, and instead must be seen as a viable, appealing and utterly normal part of Canada.” –

*Ken Coate, a writer raised in the Yukon and dean of arts at the University of Waterloo*

“As exchanges between Prime Minister Harper and the U.S. ambassador revealed last fall, much of the government rhetoric about Arctic security is confrontational, pitting Canada against the United States and stressing our divergent interests. But there may also be opportunities for cooperation, as our study of the DEW Line experience reveals. The Rangers [a community volunteer component of the Canadian Forces Reserves, of which two-thirds are of Aboriginal descent] demonstrate that there is also room for intimate cooperation and practical partnership within our diverse country. ... While the existing literature tends to stress points of friction between Aboriginal peoples and the Canadian military, such as confrontations at Goose Bay, Oka, and Ipperwash, there are also intimate cooperation and very positive relationships that prevail across the North. We sometimes forget that Inuit leaders have defined themselves as ‘Canadian First, First Canadians.’” – *Whitney Lackenbauer, assistant professor at University of Waterloo, Ontario, who studies sovereignty and security in The North, 2006*

Review each quote, reflecting on the content of the opinion, whose opinion it is and how one could categorize the speaker (i.e., What “interest group” does the speaker belong to?).

### Step Three

Explain to students that throughout Canada's history, one of the challenges has been to establish a sense of nation in a vast country that stretches from sea to sea to sea. Remind them that citizens do not always agree on how to handle public issues or even the importance of public issues.

Post this poll, or read it to the students (from February 2007 about Canadian Arctic sovereignty) :

#### **Q: On a scale of 1 to 10, how important is the issue of Arctic sovereignty to Canada?**

Important - 48%  
Neutral - 18%  
Not important - 9%  
Don't know - 24%

The importance of this issue is felt more strongly among older Canadians aged 55 or older: 64%, 35-54: 49%, under 35: 34%, those with a post-secondary education (51% vs. 40% of those without) and men (60% vs. 37% of women).

#### **Q: In your opinion, is Canada's northern border most vulnerable to...**

Usage of natural resources - 57%  
American control - 36%  
Terrorist attacks - 10%  
Enemy nations making land claims - 9%  
Don't know / refused - 9%  
None of the above - 5%

Younger Canadians (under 35: 61%, 35-54: 57%) are most concerned with the usage of natural resources, while the fears of those over 54 are split between American control (43%) and the use of natural resources (51%).

#### **Q: Which of the following statements would you most agree with?**

Canada should assert its Arctic sovereignty claims through legal authority - 52%  
Canada should assert its Arctic sovereignty claims by placing troops at key points - 18%  
Canada should assert its existing practices as they relate to Arctic sovereignty - 12%  
Canada should not worry about Arctic sovereignty - 4%  
Don't know / refused - 15%

Discuss with the students how the respondents are divided into age categories. Ask whether this might affect their responses.

**Share this poll (that compares August 2007 views to August 2008 views) :**



### Polling Data

Do you agree or disagree with the following statements?  
(Strongly Agree / Moderately Agree responses only)

	Aug. 08	Aug. 07
Canada should invest heavily on securing sovereignty over its Arctic territory	74%	75%
Russia represents a bigger threat than the United States to Canada in matters related to Arctic sovereignty	54%	53%
I have confidence in the government of Stephen Harper to secure Canada's Arctic sovereignty	41%	44%
Canada should plant a flag on the Arctic's seabed	56%	51%

Source: Angus Reid Strategies

Methodology: Online interviews with 1,014 Canadian adults, conducted from Aug. 15 to Aug. 17, 2008. Margin of error is 3.1 per cent.

Finally, read to students the results of this national poll released in May 2008 by the Pembina Institute:

"Twenty nine per cent of Canadians chose "global warming" when asked what the federal government's top priority should be in the Canadian Arctic. "Environmental protection" came second at 26 per cent, for a combined total of 55 per cent. Addressing social problems was respondents' third choice at 18 per cent, followed by the federal government's current focus, "Canadian sovereignty," in fourth place at 17 per cent. Just seven per cent of Canadians say that economic development is a top priority in the Arctic."

### Discuss these questions with the students:

- Do Canadians share the same views on the priorities in the Arctic or on the importance of Arctic sovereignty?
- Do you think this shows a difference in Canadians' beliefs or values? Are all Canadians equal stakeholders in the outcome?
- Is it essential that people must share the same perspective on a public issue in order to share a sense of nationhood? (Canadians have a tolerance for difference of opinion) What is your perspective? How does it reflect your beliefs and values?
- Is it essential that people must choose to participate in society in the same way in order for them to be "good citizens"? (There are a variety of ways in which people choose to participate, for example, membership in political parties; participation in protest movements; financial or volunteer support for educational or community service programs; support for religious or ethnic charitable organizations). In what way do you participate?

### Step Four

Tell students their challenge in this lesson is to participate in the Raise Your Profile! Project. They will create various imaginary profiles, each one describing a Canadian with a particular perspective on the issue of Canadian sovereignty in The North and its importance. The profile will outline the perspective and the reasons for it. The profile will describe details about the Canadian, including name, age, gender, education, occupation or way of life, philosophical views, etc. They will come up with a way to demonstrate, using the profiles, that a diversity of Canadians representing a diversity of perspectives can still make up one nation.

Explain that they will have several hours throughout the weeks ahead to work on the campaign.

Assist them in discussing and planning their project for example, by asking questions such as:

- What is the purpose of the project? (To demonstrate to one another, to other students, and to the community that the diversity of interest groups with varying perspectives about Arctic sovereignty are nevertheless united within our nation).
- How will you go about achieving these goals? (Work in small groups/pairs/individually to create profiles; two profiles per team).
- What will the profiles consist of? (Illustrations accompanied by written captions for each profile; video of characters profiled monologuing about his/her perspective; Q and A taped interviews with individuals profiled).
- Will you connect the profiles? (Have individuals take on various profiles and debate their perspectives; use the Arctic e-Discussion (see resource list below) as a model for presenting information and differing views of various profiles on Arctic sovereignty).
- Is your plan realistic?
- How will you know if it has been successful?

### Step Five

Set aside time for students to work on the Raise Your Profile! project.

Observe them as they research and prepare the profiles. Evaluate how well they work together, sharing ideas, and delegating tasks. Listen in on their conversations as they assess data and decide how to present information.

Assist students in staying on target for the finish date of their



project. Help them with any further preparations necessary such as, assembling equipment or materials, inviting observers, arranging school announcements or bulletins, and/or liaising with the principal or other teachers to facilitate the participation of students in other classrooms in the school.

### Step Six

Assist students in displaying or sharing their Raise Your Profile! projects with the intended audience.

### Step Seven

Have students discuss as a class the results of the Raise Your Profile! project. Help them evaluate the process they created and establish whether the final goals were met. Have them think about what they might do differently next time. Ask them to share comments about how it felt to try to present the perspectives of others, whether or not it changed their own views, and what they learned overall from this experience.

### Optional Extension Activities:

- To investigate another perspective on Canada's Arctic sovereignty, students can visit the RCMP website: Canadian Sovereignty in the Arctic: Challenges for the RCMP, June 5, 2007. Have them analyze the content by answering questions such as: What is the bias in this website and how do we know? Who is the audience of this website? What key points are addressed and why? What key points are not addressed and why? Have them choose a different "interest group" and create an outline of a website about Canadian Sovereignty in the Arctic that might represent this group's perspective. Ask: What do these two groups with diverse perspectives have in common? How do they both fit with one Canada?
- The year 2007-2008 was International Polar Year. The Canadian Museum of Nature hosted a series of public forums and lectures focused on the question "What does the Arctic mean to you?" Its goal was to raise national awareness about the Canadian Arctic and its people, northern issues, and the

impact of climate change on Polar Regions. In its annual report it stated, "Events like the Polar Perspectives lecture series engaged Canadians in the debate on issues of relevance to our country's natural heritage." Students can explain whether they think this institute might have a bias, why, and what it might be. They can research to see if it has a position or perspective on Canadian sovereignty in the North. Students can consider what role Canadian institutions have in stimulating public debate in Canada, what impact they have, and what their responsibility is towards encouraging diversity and unity.

- One of the four objectives outlined in the Northern Dimension of Canada's Foreign Policy, released by the Department of Foreign Affairs and International Trade, is "to assert and ensure the preservation of Canada's sovereignty in the North." The report also states that "a Canadian strategy for a northern foreign policy was developed through a unique and extensive process of consultation with Canadians, including Aboriginal peoples, other northerners, parliamentarians, policy experts and many others. This was a deliberate process of public engagement, and one that the government intends to continue .... The government believes that it is critical to maintain an ongoing process of interaction and discussion with interested stakeholders." Students can read the report, and then research to find out who exactly was consulted (who are the "stakeholders"). Have them consider why these groups were included, and whether they think there are others who should have been included in the dialogue, if so, who. Encourage them to write a letter to the organization, expressing these views and also, if they wish, their views on Canada's sovereignty in the North.

### Assessment and Evaluation Rubrics:

#### General

##### Discussion

Level 1: Did not participate or contribute to the teacher-directed discussions.

Level 2: Participated somewhat in the teacher-directed discussions.

Level 3: Active participation in the teacher-directed discussions.

Level 4: Made a significant contribution to the teacher-directed discussions.

#### Content

Level 1: Demonstrated limited understanding of concepts, facts, and terms.

Level 2: Demonstrated some understanding of concepts, facts, and terms.



Level 3: Demonstrated considerable understanding of concepts, facts, and terms.

Level 4: Demonstrated thorough understanding of concepts, facts, and terms.

### Written Work

Level 1: Written report had many grammatical errors, is poorly structured, and confusing.

Level 2: Written report was generally clear, but has numerous grammatical errors.

Level 3: Written report was well-structured and clear, but has a few significant errors.

Level 4: Written report was very clear, well-organized with few errors.

### Oral Presentation

Level 1: Oral report was confusing, lacked emphasis and energy with no discussion resulting

Level 2: Oral report was clear, but lacked energy and emphasis with little discussion resulting.

Level 3: Oral report was clear and vibrantly presented, but lacked some emphasis and energy with a good discussion resulting.

Level 4: Oral report was clear and enthusiastically presented with energetic discussion resulting.

### Team Work

Level 1: One or two members dominated the team, very little cooperation.

Level 2: Majority of the group made a contribution with some recognition of individual strengths, but cooperation was superficial.

Level 3: Most members made a significant contribution with a good level of cooperation.

Level 4: All members made a significant contribution. Individual strengths were recognized and used effectively. Excellent cooperation among group members.

### Specific

#### Step One

Level 1: Student has a poor understanding of diversity and democratic citizenship.

Level 2: Student has a basic understanding of diversity and democratic citizenship.

Level 3: Student has a good understanding of diversity and democratic citizenship.

Level 4: Student has an exemplary understanding of diversity and democratic citizenship.

#### Step Two

Level 1: Student has a poor ability to understand and compare the diversity of beliefs, values, and points of view of Canadian citizens on an issue of public interest (e.g., sovereignty in the North).

Level 2: Student has a basic ability to understand and compare the diversity of beliefs, values, and points of view of Canadian citizens on an issue of public interest (e.g., sovereignty in the North).

Level 3: Student has a good ability to understand and compare the diversity of beliefs, values, and points of view of Canadian citizens on an issue of public interest (e.g., sovereignty in the North).

Level 4: Student has an exemplary ability to understand and compare the diversity of beliefs, values, and points of view of Canadian citizens on an issue of public interest (e.g., sovereignty in the North).

#### Step Three

Level 1: Student has a poor understanding of how the diversity of beliefs and values of Canadian citizens, including their own, can be connected to a sense of civic purpose and preferred types of participation.

Level 2: Student has a basic understanding of how the diversity of beliefs and values of Canadian citizens, including their own, can be connected to a sense of civic purpose and preferred types of participation.

Level 3: Student has a good understanding of how theirs and others' beliefs and values can be connected to a sense of civic purpose and preferred types of participation.

Level 4: Student has an exemplary understanding of understanding of how the diversity of beliefs and values of Canadian citizens, including their own, can be connected to a sense of civic purpose and preferred types of participation.

## Step Four

Level 1: Student exhibited poor participation in the planning of the Raise Your Profile! project.

Level 2: Student exhibited basic participation in the planning of the Raise Your Profile! project.

Level 3: Student exhibited good participation in the planning of the Raise Your Profile! Project.

Level 4: Student exhibited exemplary participation in the planning of the Raise Your Profile! project.

## Step Five

Level 1: Student exhibited poor ability in the presentation of the Raise Your Profile! project.

Level 2: Student exhibited basic ability in the presentation of the Raise Your Profile! project.

Level 3: Student exhibited good ability in the presentation of the Raise Your Profile! project.

Level 4: Student exhibited exemplary ability in the presentation of the Raise Your Profile! project.

## Step Six

Level 1: Student came away with a poor understanding of the results of the Raise Your Profile! project.

Level 2: Student came away with a basic understanding of the results of the Raise Your Profile! project.

Level 3: Student came away with a good understanding of the results of the Raise Your Profile! project.

Level 4: Student came away with an exemplary understanding of the results of the Raise Your Profile! project.

## Resources:

Opinion: Canada and the Northwest Passage – Sovereignty versus Heritage (January 2009 opinion article):

<http://www.digitaljournal.com/article/265204>

Canada's Northern Strategy (federal government website):

<http://www.canadainternational.gc.ca/eu-ue/policies-politiques/arctic-arctique.aspx?lang=eng>

Northern Dimension of Canada's Foreign Policy (report):

<http://www.international.gc.ca/polar-polaire/assets/pdfs/ndcfc-en.pdf>

The Arctic: Questions and Resources (e-Discussion; Foreign Affairs, and International Trade Canada):

<http://www.international.gc.ca/cip-pic/discussions/arctic-arctique/index.aspx?lang=eng#2>

Canadian Sovereignty in the Arctic: Challenges for the RCMP - June 5, 2007

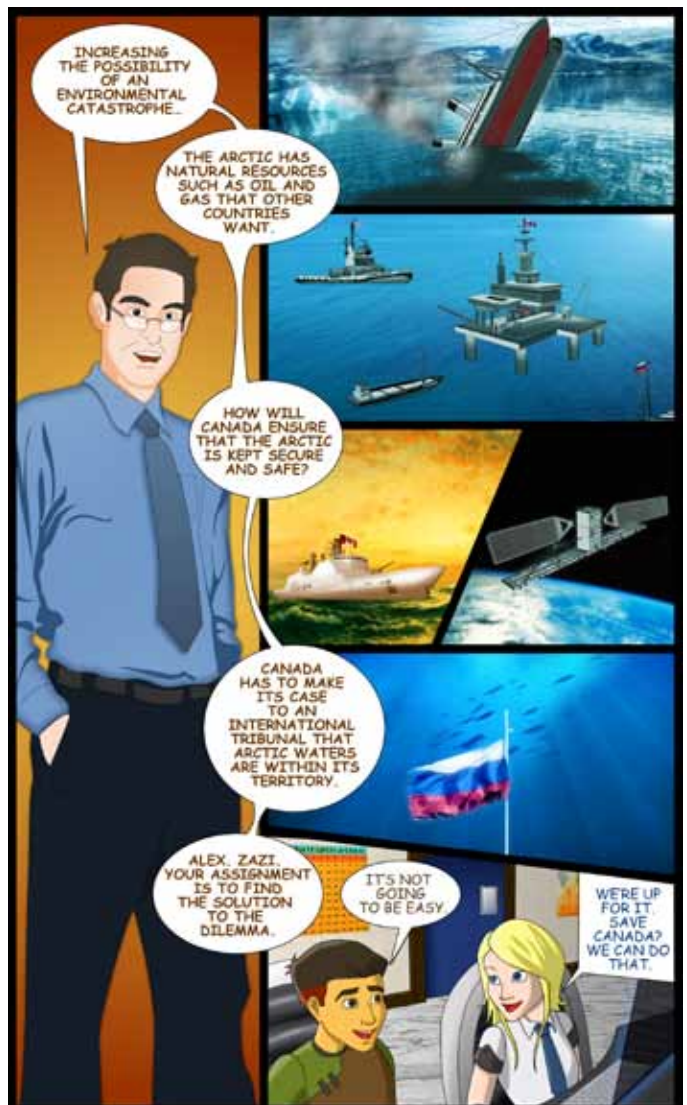
<http://www.rcmp-grc.gc.ca/ci-rc/reports-rapports/cs-sc/index-eng.htm>

Canadian Arctic Sovereignty and Security in a Transforming Circumpolar World, Rob Huebert, July 2009 (report):

[www.canadianinternationalcouncil.org](http://www.canadianinternationalcouncil.org)

Stopping Canadian Sovereignty from Melting Away, Matthew Van Dongen, Carleton University (article):

<http://www.carleton.ca/JMC/cnews/01022002/connections/c3.html>



## Bitstrips for Schools

[www.bitstripsforschools.com](http://www.bitstripsforschools.com)

## Wolfram|Alpha

[www.wolframalpha.com](http://www.wolframalpha.com)



The Sunday Funnies aren't the only place you will find comics. Launched in 2009, Bitstrips for Schools is a web-based educational tool allowing students to create their own comic strips without having to draw. Students can engage in narrative and storytelling techniques by designing custom characters, adding scenes and props, and including words, actions, and emotions to depict their story. Afterwards, peers can share, remix, and comment on completed comics.

Bitstrips helps develop student critical thinking, visual literacy, and collaboration skills. It also introduces elements of identity and role-play as students demonstrate their learning in a personal and creative way. Bitstrips is also an effective learning tool for ELL and children with autism.

Curriculum-related activities allow you to teach using a fun and familiar medium, adapting Bitstrips easily for any subject. Once logged into your teacher panel, a news dashboard shows the latest student activity and student permission settings and ensures student safety and privacy.

To date, over 30,000 teachers have used Bitstrips in over 5,000 schools. Almost 20,000 new comics are created across Canada everyday. In Ontario, each publicly funded school has licensed access to the comic-creating tool.

Bitstrips' Shahan Panth says, that among the approximately 450,000 students who used Bitstrips for Schools last year, boys wrote as many comics on a per-student basis as girls—suggesting that Bitstrips is an effective tool to help close the gender literacy gap.

Wolfram|Alpha is a free, online, computational knowledge engine that generates answers to questions in real time by doing computations on its own vast, internal knowledge base. It is essentially an intelligent search engine that is a combination of dictionary, graphing calculator, atlas, encyclopedia, multimedia gallery, and much more.

The results are quite different from any other search engine. For example, if you search "life expectancy", your results will display the life expectancy of the entire world population. There will be a summary of the mean, median, highest, and lowest expectancies of the world and a list of countries with the highest ages (Macau at 84.4 years old) and the lowest (Swaziland at 32 years old). Wolfram|Alpha will also generate the same data in different forms: a geographic map, graph, and a table converting the life expectancies into days, hours, minutes, etc.

Wolfram|Alpha is also capable of computing complex mathematical equations. If you search "solve derivative of  $x^4 \sin x$ " — the equation will be solved, its values plotted on graphs, and its alternate forms, root, and indefinite integral given. (A good way for students to check if their homework is correct.)

This new form of search engine is appropriate for any school subject. If "Rigel" (a star) is queried, you will discover its basic information such as, distance from Earth, mass, and temperature. Also displayed are Rigel's position on the Hertzsprung-Russell diagram, nearby sky objects, and its current sky position in relation to the searcher's location.

Wolfram|Alpha generates answers to questions using its own internally curated data sources (and not the Internet). As a result, teachers need not worry about inadvertently displaying inappropriate web content unlike other search engines. Also, when using this new type of search portal, students no longer need to sift through dozens of websites to find their information, making it an excellent resource for their studies.

For teachers, Wolfram|Alpha provides thousands of query examples in dozens of categories. There are videos of how educators across the globe are incorporating Wolfram|Alpha into their classroom activities. There is also a dedicated Education Group on Wolfram|Alpha's forum as well as lesson plans for math, science, and social sciences.

Wolfram|Alpha is available as an app for smartphones and is compatible with all classroom presentation technologies.



Your recycling efforts -



- give water bottles a second life.



123 recycled Nestlé Pure Life bottles produce one sweater\*

Nestlé Pure Life RECYCLERS Together we can make a difference

www.nestle-waters.ca



\*Based on 500 mL Nestlé Pure Life bottle weighing 12.2 grams and conversion of NAPCOR reference

« LE T4 N'EST PAS  
UN VÉHICULE TOUT-TERRAIN. »

Intégrez LA ZONE à votre plan de cours et courez la chance de gagner un tableau SMART Board.

Conçue pour les enseignants et prête à être utilisée en classe, LA ZONE est une ressource en ligne primée et gratuite qui, par l'entremise de scénarios accrocheurs et d'outils interactifs, permet d'enseigner aux ados les notions élémentaires liées aux finances personnelles.

>> Inscrivez-vous à [lalikeconomik.gc.ca/lazone](http://lalikeconomik.gc.ca/lazone) avant le 31 mars : vous pourriez gagner un tableau SMART Board pour votre école, et vos élèves courront la chance de gagner un ordinateur portable.

Entrez le code promotionnel : Enseigner



THE CITY

1 866 461-3222

“CREDIT CHECK IS NOT AN APP.”

Make THE CITY part of your teaching plan and you could win a SMART Board.

Designed for teachers and ready to use in the classroom, THE CITY is an award-winning, free online resource that uses engaging scenarios and interactive tools to teach teens basic financial skills.

>> Register at [themoneybelt.gc.ca/thecity](http://themoneybelt.gc.ca/thecity) before March 31st and you could win a SMART Board for your school. And your students could win a laptop.

Enter PROMO CODE: Teach



Financial Consumer  
Agency of Canada

Agence de la consommation  
en matière financière du Canada



BRITISH COLUMBIA SECURITIES COMMISSION

Canada