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The Mining Controversy

*An Awareness and Education Kit
for Ontario Grade 7*

March 2006

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Table of Contents

	Page
Table of Contents	2
Introduction	3
○ Why examine the mining controversy?	4
○ Series of goals	4
○ Overview	5
○ Ontario Curriculum	6
○ Reading Strategies	10
○ Writing	11
○ Debating in the classroom	11
○ Background	12
Teacher plans and articles	16
○ Report on Business	17
○ Mining Footprint	20
○ Nishnawbe Aski Nation	23
○ Sustainable Development and Corporate Social Responsibility	26
Developing your own point of view	28
Writing an Opinion Piece	29
The Great Debate	33
Student Activity Sheets	38
Overheads	45
Rubrics	52
Glossary	58



Introduction



Why examine the mining controversy?

Everyone enjoys the benefits of products derived from the mining industry: we drive in cars and ride in busses; we use stoves to heat our food; we work on computers with metal components; and we wear jewellery made of precious and semi precious metals. Our dependency on the extraction of minerals results in a cost both from an economical and ecological standpoint. As our demands increase on a non-renewable resource, there is a need to consider conservation, recycling and re-use as alternatives to extraction of raw materials.

In the last century, mining was viewed as a way to develop and populate remote areas. Towns and cities were built based on the establishment of a mine. It provided employment and contributed to the economy of communities.

Today, exploration for minerals, development of mines, and production of metals promise to contribute to the economy, provide employment opportunities, and provide us with the materials on which we have become dependant. The demands for non-renewable resources are worldwide and yet are being depleted.

On the other side of the issue, the costs of a boom and bust industry are being questioned. There is a demand for the short-term interests of a mine to be measured against the long-term impact on health, water and air quality, fish and wildlife habitat, and community interests. Federal and provincial government ministries must balance the promotion of resource development with preserving the environment and protecting public health. “Mining activities can cause significant impacts on the environment, potentially affecting groundwater and surface water, aquatic life, vegetation, soil, air quality, wildlife, and human health.”¹

Is there a need to revise the way we extract and refine? Is enough being done to lower metal consumption through reduction, reuse and recycling?

This unit is designed to meet required curriculum outcomes in an accessible and readable format. It provides material that looks at both the potential benefits and the ramifications of mining.

Series of goals:

- To provide teachers with practical tools, accessible information, easily reproducible and Internet available material to better achieve and supplement their curriculum requirements;
- To critically examine the social, economic, cultural and environmental impact of mining;
- To identify benefits of mining and the need for extraction of minerals;
- To examine how different interest groups have varied points of view;
- To enable students to make informed opinions concerning mining in Canada.

¹ 2005 Annual Report of the Office of the Auditor General of Ontario, MNM Mines and Mineral Program Chapter 3 Dec. 2005

Overview:

First and foremost, this unit aims to assist teachers. One of the challenges we face as educators is to provide information so that students develop skills to make informed decisions and to link information to real world situations. With increased curriculum demands and decreased time, teachers have difficulty researching new topics. For this reason, this resource unit will provide direct links to provincial curriculum and prescribed learning outcomes.

By providing information from a variety of viewpoints about the economic, social, cultural and environmental implications of mining, this unit provides the opportunity for teachers and students to study, to seriously analyze and to discuss issues that lead to developing informed opinions.

Rather than having one lesson per subject requirement, this educational resource is cross-curricular in approach and is designed to overlap subjects. This approach is used to examine different genres of non-fiction materials expressing varying points of views about mining.

Geographical and Scientific content is used to develop overall and specific outcomes from the Grade 7 Ontario Curriculum in Language, Geography and Science as shown in the chart that follows. A complete list of curriculum links showing Overall and Specific Expectations is also provided.

The unit is organized into three sections: Reading, Writing, and Oral and Visual Presentation. It also includes background information, teacher preparation, articles, transparencies, student activity sheets, assessment tools, and a glossary of terms.

Part 1 Reading

Students will develop vocabulary, learn to quickly skim an article, learn to read slowly for understanding, and learn to determine the relationship between main ideas and supporting details. The first set of activities explores facts and opinions presented from different points of view: environmentalist, First Nations, business, and government. These activities practise and refine reading skills, and work towards developing student independence.

Part 11 Writing

Based on the information from the articles, students will choose the position that is most closely aligned with their own point of view. They will organize information and then write a position paper.

Part 111 Oral and Visual Communication

Students will be presented with a situation and fact sheets reflecting arguments “for” or “against” the opening of a mine. Teams will prepare for and take part in an organized debate.

*****As activities are co-dependent, it is important for students to keep their work organized and available for future reference.*****

Ontario Curriculum: Grade 7

Subject	Strand	Topic	Specific Expectations
Geography		Theme of Geographic Inquiry	Understanding Concepts Applying Concepts and Skills in Various Contexts
		Natural Resources	Understanding Concepts Developing Inquiry/Research and Communication Skills Applying Skills in Various Contexts
Science	Earth and Space Systems	Earth's Crust	Relating Science and Technology to the World Outside the School
Language	Reading		Reasoning and Critical Thinking Understanding Form and Style Vocabulary Building Use of Conventions
	Writing		Spelling Grammar Word Use and Vocabulary Building
	Oral and Visual Communication		Use of Words and Oral Language Structures Non-verbal Communication Skills Group Skills

Ontario Curriculum Connections

This learning resource for grade 7 Ontario teachers is based on an integrated model of programme delivery. It satisfies a number of overall and specific expectations in the Ontario Curriculum - Grade 7 Language, Geography, and Science. Educators in other provinces and territories can use the expectations as guidelines.

Geography

Topic: Themes of Geographic Inquiry

Overall Expectations:

- Demonstrate an understanding of geographic inquiry;
- Use the five themes of geography (location/place, environment, region, interaction, movement) to focus inquiries;

Specific Expectations:

Understanding Concepts

- Demonstrate an understanding of the interaction theme (e.g., the environment provides opportunities and challenges; people change the environment as they use it);

Applying Concepts and Skills in Various Contexts

- Communicate an understanding that various individuals and groups have different opinions on environmental issues;

Topic: Natural Resources

Overall Expectations:

- Demonstrate an understanding of how Canada's natural resources have contributed to its economic development;

- Demonstrate an understanding of how human activity affects people and the environment.

Specific Expectations:

Understanding Concepts

- Demonstrate an understanding of how technology has affected natural resources (e.g., with respect to their discovery, extraction, processing, and marketing).

Developing Inquiry/Research and Communication Skills

- Formulate comparative and speculative questions to identify issues and define problems regarding study topics (e.g., the effect of technology on natural resources).

Applying Concept and Skills in Various Contexts

- Present and defend a point of view on how a resource should be used.

Science and Technology

Strand: Earth and Space Systems

Topic: Earth's Crust

Overall Expectations:

- Identify the factors that must be considered in making informed decisions about land use and explain their importance (e.g., environmental impact);

Specific Expectations:

Relating Science and Technology to the World Outside of School

- Identify the factors that must be considered in making informed decisions about land use (e.g., environmental impact, jobs, present and future values of natural resources);
- Investigate some of the ways in which humans have altered the landscape to meet their needs and assess the environmental and economic consequences.

Language

Strand: Reading

Overall Expectations:

- Read a variety of fiction and non-fiction materials (reports and articles) for different purposes;
- Read aloud, showing understanding of the material and awareness of the audience;
- Read independently, selecting appropriate reading strategies;
- Decide on a specific purpose for reading, and select the material needed from a variety of appropriate sources;
- Understand the vocabulary and language structures appropriate for this grade level;
- Use conventions of written materials to help understand and use the materials.

Specific Expectations:

Reasoning and Critical Thinking

- Identify the main idea in information materials, and explain how the details support the main ideas;
- Make judgements and draw conclusions about ideas in written materials on the basis of evidence;
- Clarify and develop points of view examining the ideas of others;
- Select appropriate reading strategies (e.g., skim text for specific information; record key points and organize them in a sequence).

Understanding of Form and Style

- Identify various forms of writing and describe their key features.

Vocabulary Building

- Use a variety of strategies to determine the meaning of unfamiliar words.

Use of conventions

- Use a variety of conventions of formal texts to locate information needed (footnotes).

Strand: Writing

Overall Expectations:

- Communicate ideas and information for a variety of purposes (to outline an argument, to report observations) and to specific audiences, using forms appropriate for their purpose and topic;
- Use writing for various purposes and in a range of contexts, including school work (e.g., to make point form notes from a text, to jot down personal impressions);
- Produce pieces of writing using a variety of forms, (e.g., descriptive, narrative, and expository compositions) techniques, and resources appropriate to the form and purpose, and materials from other media (e.g., diagrams, illustrations);

Specific Expectations:

Grammar:

- Use a variety of sentence types appropriately and effectively.

Spelling:

- Use a variety of resources to spell difficult, unfamiliar words.

Word Use and Vocabulary Building:

- Give evidence of an expanding vocabulary in writing;
- Show a growing awareness of the expressiveness of words in word choice.

Strand: Oral and Visual Communication

Overall expectations:

- Ask questions and discuss different aspects of ideas in order to clarify their thinking;
- Express and respond to a range of ideas and opinions concisely, clearly, and appropriately;
- Demonstrate the ability to concentrate by identifying main points and staying on topic;

Specific Expectations

Use of Words and Oral Language Structures

- Regularly incorporate new vocabulary into discussions and presentations;
- Use words or phrases to signal that a new or important point is about to be made (*e.g., My central point is..., Note that..., First...Second...Third...*);
- Use repetition for emphasis;
- Rehearse and revise material before making a presentation (e.g., reorder ideas, change the conclusion);

Non-verbal Communication Skills

- Identify some of the ways in which non-verbal communication techniques (e.g., tone of voice and body language) can affect audiences, and use these techniques in a speech to arouse and maintain interest, and convince and persuade listeners;
- Use eye contact, variations in pace, appropriate gestures, and such devices as the “pause for effect” in presentations.

Group Skills

- Listen and respond constructively to alternative ideas or viewpoints;
- Express ideas and opinions confidently but without trying to dominate the discussion;
- Analyse factors that contribute to the success, or lack of success, of a discussion.

Reading strategies

Different reading strategies can be used to read different texts and for different purposes. Learning and practising these skills are important as students are exposed to increasing volumes of material and information. This unit includes activities that allow students to learn and practice strategies that lead to greater independence. Students will practice techniques that assist them to read quickly; they will also practice reading more slowly for detail. By integrating reading strategies, students can decide whether the text is relevant or of interest, locate specific information, and read for detail. Students learn to make inferences, judgements, and draw conclusions. This enables them to form their own opinions and to establish a point of view.

Reading quickly:

Learning how to skim will enhance students' ability to determine if a text relates to the topic and purpose of an assignment. They need to learn to read quickly when studying or looking for specific information from an article or book: names, times, places etc. The skimming strategy will allow students to read a lot of material in a limited amount of time. Information that is not relevant to a purpose is ignored. They can then decide whether the text should be read in more detail.

Learning to skim will assist students to understand the gist of a text and to locate specific points. When students skim the text first, they learn to find key words to gain an understanding of the main idea and relevant details. It facilitates a better understanding when rereading the text for detail.

Skimming is a fast reading technique where every word is not read. Eyes move quickly down the page looking for specific information. When this strategy is practiced, a text can be read three to four times faster than normal reading.

Reading more slowly:

When students read for detail, they read every word and think about the meaning of every sentence and paragraph. Students may read a text in detail in order to identify the main idea and supporting details. Reading slowly can help the student identify how details are used to support the main idea.

Reading slowly allows students to identify new or unfamiliar words and to determine their meaning through context or by using a dictionary or a thesaurus.

It is important that students think about the facts in order to determine meaning: what is important, why it is important and how one event influences another. This helps them to make inferences, gain understanding, draw conclusions and make judgements.

When reading, students must distinguish between an established fact and a personal opinion. Learning to "read between the lines" assists students to interpret what the writer is saying.

It is important that students determine the point of view of an information source. Since the information found in some documents may or may not be supportive of an issue, students must learn to identify biases in order to better evaluate the accuracy and usefulness of their research.

Writing

In the Ontario Secondary School Literacy Test, students are asked to produce four pieces of writing including several paragraphs expressing an opinion. The writing tasks are designed to measure student achievement in development of a main idea, provision of supporting details, organization and linking of ideas and information, use of an appropriate tone for the purpose and the intended reader, and use of correct grammar, punctuation, and spelling. This unit provides students with the opportunity to learn how to organize and structure their work in order to write effectively.

It is important that the students develop a level of confidence and skill before writing an opinion piece independently. The teacher needs to model the process: overheads and detailed lessons provide instruction. Student Activity Sheets and an example of an outline can assist with the organization of information. Jointly composing an opinion piece creates a model for students. Writing a piece with input from others assists students to move toward greater independence and clarity in their writing. Teachers can encourage students to evaluate and reflect upon the effectiveness of their own writing and the writing of others. An evaluation rubric is provided.

In Part 1: Reading, students read and analyzed articles expressing a number of points of view. In Part 2: Writing, students learn how to write an opinion piece based on their position concerning the mining controversy. They develop an opinion based on what they have read and can use facts or quotations as resources to back up their arguments.

Debating in the classroom

There are many reasons to introduce debating in the classroom. When students participate in a debate, they work as members of a team. Students learn the need to be fully informed about an issue before making an opinion and to appreciate both sides of an argument. A debate allows students to develop skills in public speaking and communicating effectively. Organized debating helps to improve students' self-esteem and confidence.

In Part 1: Reading, students read and analyzed articles expressing a number of points of view. In Part 2: Writing, students learn how to write an opinion piece. In Part 3: Oral Presentation, students learn the structure of a debate and how to effectively argue their point of view. The debate is broken into parts: the introduction, the argument, the rebuttal, and the conclusion. Students in each group must organize so that they share the responsibilities. They are provided with a situation and assigned a position 'for' or 'against' the development of a mine. The assigned position may not reflect the student's opinion. An organizer is provided to assist students to understand their role on the team and to organize their individual arguments. Different fact sheets are provided to each team with information that can be used to develop arguments.

Overheads have been provided to assist teachers in teaching the rules of debate and to review the qualities that are necessary for effective debating. A rubric has been provided for assessment purposes.

Background:

Mining is prevalent across Canada: more than 150 communities rely on mining for their livelihood. While contributing to the Canadian economy, mining can also have a big footprint. The extraction and processing of metal have considerable immediate and long term effects. Within a global, national and regional context, it is important to have an educational resource that guides students in investigating mining as it relates to all aspects of the economy, the environment and communities.

Educational materials about present-day local, national and global issues, such as sustainable development, human rights or climate change, are readily available as accessible resources for teachers. Although there are many resources available to teachers about mining, the information primarily focuses on topics such as the mining cycle, different types of mines, mining locations, and how it contributes to the Canadian economy. This educational resource is designed to support teachers and students as they examine and discuss the effects mining has on our world.

The impact of mining

In Ontario, according to the 2005 *Annual Report of the Office of the Auditor General of Ontario MNDM Mines and Mineral Program*:

- There is acknowledgement that abandoned mines and sites with associated tailings facilities, have the highest risk of potential environmental effects.²
- Closure plans, committing the owner to rehabilitate the mine site and return the site to its former state without harmful effects on the environment, were not in place for 18 of the 144 mine sites that were required to have them. Without closure plans in place, the Ministry may ultimately be held responsible for mine closure and cleanup.³
- The Ministry does not periodically review whether the closure-cost estimates and financial assurances are still sufficient to properly close out the mine. For example, the costs originally estimated in the closure plan for one mine were \$551,000 in 1993. The plan was not filed because the owner could not provide financial assurance. Nevertheless, the mine owner significantly underestimated closure costs. Since the mine is no longer operational and the company is not able to pay closure costs, the Ministry may ultimately be responsible for rehabilitating this site, at a cost that is now estimated to be \$9 million.⁴
- MNDM had identified more than 5,600 abandoned mine sites dating from the early 1900s. The Ministry had estimated that 4,000 of these sites were potentially hazardous to public health and safety and that approximately 250 of these sites might pose an environmental risk due to the potential for the leaching of minerals and other contaminants from mine tailings.⁵
- There are no performance measures for the long-term-sustainability goal or for minimizing the impacts of mining activities on public health and safety and the environment.⁶
- Some protected areas contain critical habitat for fish, wildlife, and other vulnerable natural resources, such as species at risk of extinction. Neither the Ministry nor the Ministry of Natural Resources is monitoring the mining lands within and adjacent to these protected areas to ensure that any exploration or future mining activities have little or no impact on the natural resources that are being protected. Any environmental damage would be contrary to the purpose of Ontario's Living Legacy

² 2005 Annual Report of the Office of the Auditor General of Ontario MNDM Mines and Mineral Program Chapter 3 Dec. 2005 page 199

³ Ibid page 183

⁴ Ibid page 183

⁵ Ibid page 183

⁶ Ibid page 201

and the Mining Act, which requires that mining activities be carried out in such a manner as to minimize the impacts on the environment.⁷

- In 1993 an inter-ministerial committee estimated that the cost of cleaning up all abandoned mine sites would be \$300 million. The Ministry has noted that the total cost to restore abandoned mine sites would be substantially higher than the 1993 estimate.⁸
- The 1993 estimate of \$300 million to rehabilitate abandoned mine sites did not include the costs associated with the cleanup of any chemical contamination, which can be considerable. For example, the Ministry estimates that the costs to rehabilitate two abandoned mines alone would be \$75 million, with the majority of these funds spent on dealing with chemical contamination from mine tailings. To determine such costs for all abandoned mine sites would involve hydrology studies and the testing of the water and soil around abandoned mine sites. Also, an assessment to determine whether there were any imminent environmental threats would be necessary to effectively manage the risks associated with abandoned mines.⁹
- The Ministry should develop more comprehensive indicators for measuring and reporting on the Mines and Minerals Program's effectiveness in ensuring that Ontario's mining sector is healthy, competitive, and sustainable and in minimizing the impacts of mining activities on public health and safety and the environment. If the Ministry were to report in this manner in these areas, it would be better able to determine if mining operations are maintaining the integrity of ecosystem functions, as well as determine the physical, chemical, and biological stress imposed by mining operations on the environment.¹⁰
- Since mining activities can have a significant impact on the environment, companies are required to provide the Ministry with financial assurance to ensure that if they are unable or unwilling to clean up a site after mining activities cease, sufficient funds are available to restore the site to a suitable use. The Ministry relies on mining companies to assess and certify the amount of security they must post. Consequently, the Ministry has little evidence to substantiate the sufficiency of the financial assurances provided so there will be sufficient funds for clean-up if they don't or can't do it.¹¹
- In 19 cases, companies have been allowed to contribute to a sinking fund instead of posting a bond. However, four of these companies were allowed to go bankrupt without having paid \$600,000 into the fund.¹²
- There are only two mine rehabilitation inspectors and almost one-half the sites have not been inspected in the last five years.¹³
- To mitigate these environmental risks and reduce the financial burden on the public to clean up such sites, the Ministry is responsible for ensuring that mine sites in Ontario are developed, operated, and closed in accordance with sound environmental practices.¹⁴
- However, the Ministry did not have adequate information on the chemical contamination that is often the by-product of mining operations. This information is necessary to assess the risk of water and soil contamination around abandoned sites.¹⁵

According to research and reports from MiningWatch Canada:

- Mining activity causes disruption to traditional indigenous livelihoods and culture.¹⁶

⁷ Ibid page 192

⁸ Ibid page 198

⁹ Ibid page 198

¹⁰ Ibid page 201

¹¹ Ibid page 195

¹² Ibid page 196

¹³ Ibid page 194

¹⁴ Ibid page 193

¹⁵ Ibid page 183

¹⁶ Mining Myths: Presentation by Joan Kuyek to the Citizens' Mining Advisory Group of Ontario, August 2004; builds on the idea that the mining industry is propped up by seven myths.

- While technologies improve efficiency, larger areas are being affected by mining. The cost and extent of exploration have increased; discoveries of significant resources have decreased. Only 1 in 10 000 claims develop to a mine; most of the claims are primary and advanced exploration sites that have not produced commercially.¹⁷
- Employment in the mining industry has declined and become specialized. The mining industry is delivering fewer jobs, lower royalties and reduced economic activity: between 1995 and 2001, jobs declined 20%, while all other industries increased by 15%. Less than 24 000 people are employed in mining and milling in Canada.¹⁸
- Transfusions of public money, including special incentives and tax exemptions between 1995 and 2001 increased by 166% and the cost to provincial taxpayers for the development of the mining industry were \$67.5 million, an increase of 58%.¹⁹
- Contributions to GDP have declined: between 1995 and 2001 royalty payments were down 45%; contribution to provincial GDP was down 24% (about one half of one percent of all industries GDP, while all industries GDP increased by 23%).²⁰

The benefits of mining

- Canada is a mineral rich country and has a history of mining.
- The mining industry contributes to the economy and provides employment.
- A relatively small area, compared to less than half the size of Prince Edward Island, is used for mining in Canada. This intensive use of a small land area produces all of the mineral materials we use every day.
- Today mining represents a temporary land use, disrupting relatively small areas of land for usually a short period of time.
- The impact on people and the environment is a small but necessary disruption.
- Canada is one of the largest mining nations in the world, producing more than 70 minerals and metals.
- Technological advances have enabled the mining and processing of previously uneconomic deposits by lowering production costs.
- Over 150 communities in Canada depend on mining. Most of these are in rural and northern regions where approximately 1 200 Aboriginal communities are in close proximity to operating mines and smelters.
- In 2003, Canada's minerals and metals industry employed about 389 000 men and women.
- Canada's minerals and metals industry provides some of the highest weekly earnings (\$1000) in comparison with the Canadian weekly average of about \$700.
- Minerals and fabricated mineral products account for almost 60 % of total revenue freight for the domestic railway system.
- Although Canadian companies operate all over the world, Canada remains the country where they allocate the largest proportion of their global mineral exploration programs.
- Once the ore deposit is depleted, the land is reclaimed for other uses, including recreation.
- The Ontario Ministry of Northern Development and Mines (MNDM) encourages the development and use of the province's mineral resources while minimizing the impacts of mining activities on pub-

¹⁷ Information from MiningWatch Canada website www.miningwatch.ca and a report released by MiningWatch Canada and the Pembina Institute "Looking Beneath the Surface" which quantifies both the public costs to support the Ontario Mining industry and the benefits generated by the industry in the fiscal years 1994-95 and 2000-01.

¹⁸ Ibid

¹⁹ Ibid

²⁰ Ibid

lic health and the environment and limiting the cost to the taxpayer, by ensuring that the industry rehabilitates mining sites.²¹

- The province is among the leading mineral producers in the world. The mining industry annually extracts metals and non-metals valued at approximately \$5.5 billion. In 2003, mineral exploration expenditures by the private sector were \$220 million. Several national and international studies estimate that each dollar spent on geoscience activities—for example, the production of geological maps—can ultimately generate \$2 to \$5 in exploration activity. If a mine is developed and begins production, each dollar spent could ultimately generate more than \$100 in benefits to the economy. Ontario mining activities provide approximately 100,000 direct and indirect jobs.²²
- The government recognizes the importance of addressing abandoned mine rehabilitation and in July 2005 announced an allocation of 10 million dollars annually.²³

Information from 2005 Annual Report of the Office of the Auditor General of Ontario MNMD Mines and Mineral Program Chapter 3 Dec. 2005 and NRCan website www.nrcan.gc.ca
Minerals and Mining: statistics on-line http://mmsd1.mms.nrcan.gc.ca/mmsd/facts/default_e.asp

²¹ 2005 Annual Report of the Office of the Auditor General of Ontario MNMD Mines and Mineral Program Chapter 3 Dec. 2005 page 182

²² Ibid page 182

²³ Ibid page 199

Teacher Plans and Articles



Reading Activity: Report on Business

Materials and Resources:

- Dictionary and thesaurus
- Class set of articles: Report on Business: Corporate Social Responsibility (Point of View of Business)
- Overheads: figure 1 and 2
- Student Activity Sheet 1: Reading: Determining Main Idea and Supporting Details

Instructional Information:

- Clarify the pronunciation and meaning of unfamiliar words.
- Skimming is a reading strategy that encourages quick reading to look for general ideas.
- Sometimes we read slowly, trying to gain a detailed understanding.
- The main idea is usually established in the first paragraph and restated in the final paragraph of each article.
- Supporting details are often examples or facts that are used to clarify and drive home the main idea.
- Individuals and groups have different points of views on social and environmental issues.
- Examining the supporting details helps students to make judgements, draw conclusions, and establish a point of view.

Procedure:

Activity 1: Vocabulary Building: *Teacher led instruction*

A list of important words is provided for pre-reading discussion in the Glossary. It would be advantageous for students to have an understanding of some words prior to reading the articles. The meaning of many words may be determined by their context. Students are encouraged to compile a personal dictionary of words that are new to them.

Important Words: *adverse, corporate social responsibility, ecotourism, extract, impact, oxymoron, stakeholder, sustainable, tailings, trauma*

Activity 2: Skimming

Use *Overhead figure 1* to lead students through each step of the skimming procedure.

Activity 3: Reading for main idea and supporting details

Use *Overhead figure 2* to identify the main idea and its supporting details. Students record answers on Student Activity Sheet 1. Use questions to ensure that students can describe how the details support the main idea.

Activity 4: Make judgements and draw conclusions

It is suggested that this be a teacher lead activity and a summary of the discussion be recorded. What does the article suggest about the author and the organization with which he or she is associated? Support your answer with references to the article.

Give reasons why you agree or disagree with the author's point of view?

mining

SCORE →

The Industry

What it's doing right "The mining industry is facing growing challenges to its social licence to operate." The majority of large mining companies have responded to those words from the Mining Association of Canada by improving CSR reporting. Most also recognize, at least in principle, that local communities are key stakeholders who ought to be consulted.

The growth of metals recycling is another promising trend, from aluminum cans to batteries and electronics. Although "recycled feed" still makes up a small fraction of total production, companies like Alcan and Noranda are increasingly important players in reprocessing waste, and reducing their dependence on raw materials extracted from the ground.

Still needs work Mining companies remain among Canada's leading polluters. Efforts to reduce emissions, cut back on greenhouse gases and limit toxic discharges could be stepped up. Ways must also be found to minimize both the toxic aftereffects of acid drainage from closed mines, and the social trauma of shutting down a town's primary employer once a mine closes. Although many firms operate overseas, where environmental and labour standards generally aren't as high as Canada's, they must adhere to the same stringent performance standards as they do here.

Most importantly, the industry needs to become far more consistent in community consultation and benefits sharing. In the process, it should address power imbalances faced by affected communities by, for instance, providing them with funding to hire legal experts to research a project's impact.

The Bottom Line

Sustainable mining is practically an oxymoron. The industry should continue to raise the bar on environmental performance and do more to put principle into practice in its relations with affected communities.



Some improvement, but occasionally disruptive



1 Alcan

61

Continues to be recognized internationally as a CSR leader. Alcan is a major processor and recycler of aluminum, though the company's record is blemished by numerous workplace fatalities over the past five years.

It faces opposition in Orissa, India, where its 45%-owned Utkal Project includes plans to construct a mine and refinery that will displace 147 families.



2 Cameco

58

Progressive employment and economic development initiatives with the aboriginal communities living around its uranium mining operations in northern Saskatchewan. And the fate of nuclear waste remains a stewardship issue for the world's largest uranium miner.



3 Falconbridge

54

Has strong relations with aboriginal and Inuit communities in Canada through benefit-sharing agreements. Bitter strikes at its Sudbury operations in Ontario suggest that labour relations could be improved. Through environmental programs, the company is working hard to meet emission-reduction targets.



4 Teck Cominco

52

Has a good record in benefits sharing with local communities, including an agreement with Inuit communities in Alaska and company-sponsored transition committees for communities facing mine closures in B.C. Still, has a bad name with U.S. environmentalists after decades of cross-border pollution.



4 Placer Dome

52

Has a benefits-sharing agreement with aboriginal communities in Northern Ontario, and is making a positive contribution to the fight against HIV/AIDS in Africa. Placer Dome has adopted a health and safety charter in response to its horrendous workplace safety record (over 30 fatalities and \$1.6 million in fines since 1999). The company still faces claims for compensation after a major tailings spill in the Philippines in 1996, and cleanup has still not been completed.



6 Noranda

50

Scores well for its corporate governance practices and charitable donations. Noranda has also provided assistance to former employees of recently closed mines and smelters. The company has racked up a number of fines and convictions for environmental and health and safety infractions in the U.S. in recent years.



7 Barrick Gold

47

Has an HIV/AIDS prevention program at its African operations, and signed on to a new international cyanide management code last year. Its public reporting on environmental issues is good, but community relations need more work, including the resolution of ongoing tensions surrounding its gold mining projects in Tanzania and Australia.



8 Inco

44

Extensive public reporting on CSR issues, but remains one of the largest polluters in the Canadian mining sector despite efforts to improve. The company has finally established good relations with aboriginal communities at Voisey's Bay in Labrador, although community relations are strained at nickel projects in New Caledonia and Guatemala.



9 Fording Canadian Coal Trust

38

Provides little reporting on environmental, health and safety, and community issues. Fording's new Cheviot coal mine on the border of Jasper National Park, a joint venture with Teck Cominco, continues to face legal challenges from environmentalists.



10 Sherritt International

37

Silence on social responsibility issues is deafening, although shareholder democracy has improved since Sherritt decided to dump its dual-class voting structure.

...continued... 2nd Annual Ranking Corporate Social Responsibility: MINING

The way mining companies treat communities affected by their operations has generated arguably more confusion - and conflict - than any other CSR issue. Each stage of a mining project - exploration, construction, production, closure and remediation - carries significant opportunities and risks for nearby communities.

When a mining firm initiates a new project, locals are often divided over the perceived economic benefits and potential environmental harm. In the case of aboriginal communities, mine development may also undermine traditional land use. Companies that mess up in this initial stage often pay the price for years. Noranda is a case in point. Soon after it announced plans in 1995 to build a Chilean aluminium plant and six dams to feed hydroelectric plants, the project faced strong opposition. Residents of Patagonia feared the Alumysa development would adversely affect the environment and such local industries as ecotourism and salmon farming. Noranda put the project on hold indefinitely after eight years of opposition.

Getting a mine into commercial production in a fair and timely manner often means insuring that local communities receive a reasonable share of the economic benefits. To get its Raglan mine in northern Quebec into operation, Falconbridge committed to profit sharing and hiring at least 20% of the mine's workforce from local Inuit communities.

Mining operations risk leaving communities with contaminated soil, lower property values, and residents with chronic health problems. Placer Dome still faces controversy over the operation of Marcopper Mining Corp. in the Philippines, which it partly owned and managed until 1997. The cleanup of tailings from a major spill in 1996 has not been completed, and according to a company commissioned assessment, a siltation dam and tailings impoundment are in danger of collapsing, which would cause further damage.

All mines eventually close, but some extraction companies have softened the blow by providing transitional support to those dependent on their operations. Ten years before the closing of its Sullivan Mine in Kimberley, B.C., Teck Cominco formed a public liaison committee to consult with the town; it later provided land and financial support for golf courses and a mining museum to help the community develop its tourism and retirement industries.

With permission

Report on Business March 2005 page 54 and 55
2nd annual ranking, Corporate Social Responsibility
by Steve Brearton, Rob Gross and Kevin Ranney.

Reading Activity: Mining Footprint

Materials and Resources:

- Dictionary and thesaurus
- Class set of articles: Mining Footprint (point of view of an environmentalist)
- Overheads: figure 1 and 2
- Student Activity Sheet 1: Reading: Determining Main Idea and Supporting Details

Instructional Information:

- Clarify the pronunciation and meaning of unfamiliar words.
- Skimming is a reading strategy that encourages quick reading to look for general ideas.
- Sometimes we read slowly, trying to gain a detailed understanding.
- The main idea is usually established in the first paragraph and restated in the final paragraph of each article.
- Supporting details are often examples or facts that are used to clarify and drive home the main idea.
- Individuals and groups have different points of views on social and environmental issues.
- Examining the supporting details helps students to make judgements, draw conclusions, and establish a point of view.

Procedure:

Activity 1: Vocabulary Building: *Teacher led instruction*

A list of important words is provided for pre-reading discussion in the Glossary. It would be advantageous for students to have an understanding of some words prior to reading the articles. The meaning of many words may be determined by their context. Students are encouraged to compile a personal dictionary of words that are new to them.

Important Words: *environmental, disruption, footprint, toxic, leaching, contaminated, remediation, lobby, abandoned, accountable, responsible mining*

Activity 2: Skimming

Make *Overhead figure 1* available for students to follow the skimming procedure.

Activity 3: Reading for main idea and supporting details

Use *Overhead figure 2* to discuss and record the main idea and its supporting details. Without the use of the completed template, students record answers on Student Activity Sheet 1. Use questions to ensure that students can describe how the details support the main idea.

Activity 4: Make judgements and draw conclusions

What does the article suggest about the author and the organization with which he or she is associated? Support your answer with references to the article.

Give reasons why you agree or disagree with the author's point of view?



Mining Footprint

Joan Kuyek, National Coordinator, MiningWatch Canada²⁴

Mining leaves a large footprint; it is not just a small hole or tunnel in the ground that is easily cleaned up afterward. In addition to the mine, there is usually a mill, tailings (the rock that is ground up to extract the ore, usually mixed with chemicals), overburden and waste rock, roads and or railroads and power lines. Mining is also a major user of water and can greatly affect its quality. Mining has a destructive impact on the environment and can have limited economic benefits.

Most of the waste rock and tailings are toxic, leaching heavy metals and sulphuric acid into water, air and soil. Over a billion tonnes of waste rock and 950,000 tonnes of tailings are produced annually by the industry. This is more than 20 times the amount of municipal solid waste generated annually. One gold wedding band leaves behind between 6-20 tonnes of waste rock and tailings.

Mining is a major consumer of water. Water is pumped from open pits and underground shafts to “dewater” them to allow mining to proceed. Water is used to wash the ore, and in milling and refining processes. Water is used to slurry tailings from the mill and is frequently used as a water cover materials that generate acid. Clean water goes in, and a lesser amount of contaminated water is discharged, often to a different water system. The Agrium phosphate mine expansion on the Constance Lake traditional territory intends to remove an entire lake and create a new one. At a national level, the mining and metal sector consumes over 2 billion cubic metres of water annually, most of this free of charge.

Mining companies are also major contributors to climate change, because of their extensive use of energy for extraction and refining.²⁵ For example, a tonne of aluminum produces four tonnes of Green House Gases and a tonne of steel produces 0.8 tonnes of GHGs. At least 8% of all energy used in Canada is for mining, milling and smelting.

Not everyone welcomes mining into his or her community. The mining industry and their supporting departments in government are fond of “stakeholder consultations”, bringing all the parties together to come to consensus. The catch is, that once you have agreed to a consultation, it becomes almost impossible to say “no”. You are reduced to negotiating the terms on which the mine will proceed.

Mining companies spend enormous amounts on gaining access to the minerals under our feet. They hire public relations people and government relations experts. They lobby for changes to law and regulations. Internationally, they hire firms to promote their image. At one time, I added up all the paid lobbyists for the mining industry: the Mining Association of Canada, the Prospectors and Developers Association, the provincial associations, the Chambers of Mines, the individual company community relations people, and realized they had about 120 people doing nothing but promoting their interests full time. Mining Watch Canada has four.

Governmental legislation and policies, as they now stand, are not sufficient to adequately protect us. Toxics in mine tailings and waste rock are not even included in the National Pollutant Release Inventory. The Planning Policy in Ontario protects land with significant mineral potential. Development is prevented on

²⁴ MiningWatch Canada is a coalition of seventeen different organizations that works to support communities affected by mining, to do research on issues pertaining to mining environment and health and to advocate for responsible mining practices. www.miningwatch.ca

²⁵ Action Plan on Climate Change 2000 Annual Report

these lands. Communities trying to get clean-ups from the toxics left behind after a mine closes, find themselves having to fight to get anything done. This process may take years with little being accomplished. The estimated number of abandoned mines and/or exploration sites in Ontario stands at over 6 000 with a predicted cost to the taxpayer of \$300 million (1993) for remediation.²⁶ In the past ten years, funding for mining exploration has increased in Ontario, and environmental inspection budgets have been reduced.

The economic benefits from mining are often limited. At present in Ontario, less than 9 000 people are actually employed in mining and milling.²⁷ Most mines only last 10-15 years. The communities that depended on mining as a source of employment become ghost towns when the mines close. Taxation from mining in Canada is only 6% - the lowest of any sector. Subsidies to the mining industry are over \$510 million annually. This does not include the cost of remediation of abandoned mines. We import as many mineral products, mostly the manufactured products, as we export.

The mining industry has not been held accountable for cleaning up mine sites. Mining contributes to climate change, pollution and leaves a large footprint which effect communities and the environment for many years. The benefits from mining do not justify the disruption to communities, the negative impacts of air and water quality, and the cost to taxpayers.



Fact Sheet #2

The Impact of Mining on the Environment



Mining has many potential environmental impacts that can be extensive and long lasting. Full environmental assessment and strong regulation are necessary to prevent negative impacts on environmental and human health.

²⁶ Looking Beneath the Surface, MiningWatch Canada and Pembina Institute, Oct. 2002 page 51

²⁷ Ibid page 57

²⁸ Environmental Mining Council of British Columbia, Fact Sheet #2 <http://www.miningwatch.org/emcbc/>

Reading Activity: NISHNAWBE ASKI NATION

Materials and Resources:

- Dictionary and thesaurus
- Class set of articles: NISHNAWBE ASKI NATION (point of view First Nations)
- Overheads: figure 1 and 2
- Student Activity Sheet 1: Reading: Determining Main Idea and Supporting Details

Instructional Information:

- Clarify the pronunciation and meaning of unfamiliar words.
- Skimming is a reading strategy that encourages quick reading to look for general ideas.
- Sometimes we read slowly, trying to gain a detailed understanding.
- The main idea is usually established in the first paragraph and restated in the final paragraph of each article.
- Supporting details are often examples or facts that are used to clarify and drive home the main idea.
- Individuals and groups have different points of views on social and environmental issues.
- Examining the supporting details helps students to make judgements, draw conclusions, and establish a point of view.

Procedure:

Activity 1: Vocabulary Building:

A list of important words is provided for pre-reading discussion in the Glossary. It would be advantageous for students to have an understanding of some words prior to reading the articles. The meaning of many words may be determined by their context. Students are encouraged to compile a personal dictionary of words that are new to them.

Important Words: *on-reserve, social transfer payments, infrastructure, aggregates, inconsistent, consultation, potential, infringement, transparent, dependency, viable, self-governing, equitable, systematically, per se, Treaty*

Activity 2: Skimming

Make *Overhead figure 1* available for students to follow.

Activity 3: Reading for main idea and supporting details

Use *Overhead figure 2* to record the main idea.

Moving towards independence: students identify and record supporting details on Student Activity Sheet 1 and describe how the details support the main idea.

Activity 4: Make judgements and draw conclusions

What does the article suggest about the author and the organization with which he or she is associated? Support your answer with references to the article.

Give reasons why you agree or disagree with the author's point of view?

NISHNAWBE ASKI NATION



Background

The Nishnawbe Aski territory covers about two-thirds of the province known as Ontario. Stretching across the north, the territory spans 700 miles in length and 400 miles in width; from the Manitoba border in the west, the Quebec border in the east and from the Hudson's Bay watersheds in the north and roughly to the Canadian National Railway line in the south. The 49 communities represented by the Nishnawbe Aski Nation are scattered throughout this area. The Treaty area includes the Districts of Cochrane, Timiskaming, Sudbury, Algoma, Thunder Bay, and Kenora. The majority of the First Nations are isolated and do not enjoy year round road access. Nishnawbe Aski Nation has a total on-reserve population of nearly 29,000. Over two-thirds of this population is under thirty (30) years of age.

The mean education level is less than grade nine. The unemployment rate is high in most communities (65% to 95%). Where employment exists, it is primarily seasonal (fishing, trapping, guiding, tourism). The result is that social transfer payments account for the bulk of family income. These facts, in addition to related social, legal, and economic factors, contribute to variety of serious problems. Apart from the isolation and lack of employment opportunities, other difficulties include poor housing, poor community services and infrastructure, inadequate medical and dental services, and a poor standard of education. Problems are also caused by the rapid disappearance of the traditional way of life, which includes the pursuits of hunting, fishing and trapping due to advancing resource development.¹

Recently, many First Nations have been met with potential resource development issues in their traditional territories. These issues are related to various sectors in the resource industry such as forestry, mining, energy, tourism, infrastructures, aggregates, etc.

¹ Nishnawbe Aski Nation: A Handbook on ' Consultation' In Natural Resource Development, 1st Edition, July 2001 page 3 and 4
www.nan.on.ca

The approaches taken to date by government and industry have been inconsistent and in some cases, unfair to The First Nations. In recent cases decided by The Supreme Court of Canada in relation to consultation, it has been determined that consultation with First Nations must be carried out by government where there is any potential impact or infringement of Aboriginal and Treaty rights. Consultation must be “meaningful and transparent.” And it must be done as a means to address First Nations’ concerns and to find ways to reduce any negative impacts or infringements on Aboriginal and Treaty rights.²

Future Directions

It has always been the desire of the NAN First Nations to break the cycle of dependency and become economically viable communities, contributing to Canadian society. Using the land’s resources is seen as the natural avenue for which NAN first nations can stand tall as self-sufficient communities ready to re-claim ourselves as self-governing Nations.

For too long, government and industry has prospered leaving behind the voices and interests of the first Nations and the land. First Nations are now demanding equitable participation and are working towards breaking barriers that systematically exclude first Nations from participation.

First Nations in NAN are re-claiming access to resource management decision making so that resources will be managed on an integrated basis taking First Nation Aboriginal and Treaty Rights and environmental responsibilities into account along with the interests of Canada and Canada’s industrial society.

First Nations are generally not opposed to resource development per se but want equal participation and acknowledgement of the fact that government and industry, through resource development initiatives, are making a direct impact on the Treaty relationship that First Nations have with Canada and Ontario.³

² Ibid page 5 and 6

³ Ibid page 4

Reading Activity: Sustainable Development and Corporate Social Responsibility

Materials and Resources:

- Dictionary and thesaurus
- Class set of articles: Sustainable Development and Corporate Social Responsibility
(Point of view of Government)

Instructional Information:

- Clarify the pronunciation and meaning of unfamiliar words.
- Skimming is a reading strategy that encourages quick reading to look for general ideas.
- Sometimes we read slowly, trying to gain a detailed understanding.
- The main idea is usually established in the first paragraph and restated in the final paragraph of each article.
- Supporting details are often examples or facts that are used to clarify and drive home the main idea.
- Individuals and groups have different points of views on social and environmental issues.
- Examining the supporting details helps students to make judgements, draw conclusions, and establish a point of view.

Procedure:

Activity 1: Vocabulary Building

A list of important words is provided for pre-reading discussion in the Glossary. It would be advantageous for students to have an understanding of some words prior to reading the articles. The meaning of many words may be determined by their context. Students are encouraged to compile a personal dictionary of words that are new to them.

Important Words: *equitable, ethical, corporate, enhancing, stewardship, innovation, capacity, diminish, adverse, integration, evolution, applications, indispensable*

Activity 2: Skimming

Remind students to use the skimming procedure.

Activity 3: Reading for main idea and supporting details

Students develop their own template to identify the main idea and supporting details. Students explain how the details support the main idea.

Activity 4: Make judgements and draw conclusions

What does the article suggest about the author and the organization with which he or she is associated? Support your answer with references to the article.

Give reasons why you agree or disagree with the author's point of view?



Corporate Social Responsibility and Sustainable Development ¹

Times are changing and so are the public's expectations of corporations in society. Traditionally, the role of the corporation was viewed as largely economic – a company provides products and services and, in doing so, creates jobs and wealth. Increasingly, however, people believe that economic growth should be linked to environmental and social well-being.

It's no longer enough that Canada boasts internationally competitive industries. Canadians want an equitable sharing of the benefits of economic progress to ensure a high quality of life for people living in the communities where these companies operate. More and more, both domestic and global consumers want assurance that the firm they purchase from is a good corporate citizen.

Stakeholders such as investors, regulators, employees, municipalities and nongovernmental organizations are also looking beyond a company's economic performance to see if it conducts its business in an ethical and socially responsible manner, and whether it is moving toward sustainable business practices.

Corporate social responsibility (CSR) is the commitment and activities by an organization to meet stakeholder expectations on economic, environmental and social performance.

The definition of CSR varies from company to company and many use other terms such as sustainable growth, corporate responsibility, social responsibility or corporate citizenship. No matter how it is described, CSR is often seen as the business contribution to sustainable development, meaning the way a company balances its economic, environmental and social objectives while addressing stakeholder expectations and enhancing shareholder value.

The importance of natural resources to Canada's society and economy has placed the natural resource sectors at the centre of the sustainable development debate. Canada has taken up the challenge of demonstrating how commitment to stewardship, knowledge, innovation, and capacity building make it possible to diminish adverse environmental impacts from resource development and use, while building world-leading industries and strong, sustainable communities. How well Canada manages to advance the integration of social, economic and environmental considerations into decision making that respects the interests of all stakeholders will impact our ability to realize the tremendous growth potential of our resource industries.

The Canadian resource sectors include some remarkable firms that have demonstrated global leadership on sustainable development within the private sector. This strong corporate leadership is helping to spread the commitment to sustainable development within the resource and allied industries generally, as more companies come to understand and accept the business case for SD. Canadian government and industry will continue to work together to ensure the growth of globally competitive industries that are socially and ecologically responsible, contributing to our nation's prosperity and maintaining Canada's status as a world leader both in the evolution of our natural resources industries and in advancing sustainable development.

Canada's resources contribute to the well being of countless users in many countries around the world through a wide variety of applications. As a respected steward of these indispensable resources, Canada recognizes its global responsibility to ensure their sustainable development, for the benefit of all citizens, both now and for the future. The decisions that are made today about how we produce, consume and trade our forest, mineral, and energy resources, will affect our economy and communities, demonstrate our responsibility to the environment and future generations, and help define us as a society.

¹ *Natural Resources Canada website for Sustainable Development*, http://www.nrcan-rncan.gc.ca/sd-dd/index_e.html, produced by Natural Resources Canada, 2004. © Reproduced with the permission of the Minister of Public Works and Government Services Canada, 2005.

Reading Activity: Developing Your Own Point of View

Materials and Resources:

- Three completed Student Activity Sheets 1 and student developed template: Identifying Main Idea and Supporting Details
- Student Activity Sheet 2: Developing Your Own Point of View

Instructional Information:

- Articles, speeches, papers and news reports can be biased, incomplete or misleading.
- Opinions can be based on what you have heard, what you have seen, and what you have read.
- Organizing information can assist in making a judgement, and forming an opinion.
- When a person makes a judgement and then expresses an opinion, he/she believes that the opinion is right. That person must also recognize that there is a fifty percent chance that the opinion is wrong.
- Opinions can change based on new information.

Procedure:

Class discussion:

What is the difference between fact and opinion?

What is an opinion or belief that you have held that changed as you grew and matured?

Why did it change?

Where do we get our information?

How do we know that it is true?

How do we form an opinion?

Activity: Developing Your Own Point of View

Review the main ideas and supporting details for each article from the Student Activity Sheets: Identifying Main Idea and Supporting Details.

On each sheet, mark the detail that you think is the most important; mark the detail that you think is the least important.

Complete the Student Activity Sheet 2: Developing Your Own Point of View.

Writing an Opinion Piece

Materials and Resources:

- *Overhead Figure 3: What is Your Opinion?*
- Student Activity Sheet 4: What is your Opinion?
- Student Activity Sheet 5: The Topic Outline
- Student Instructions for Writing an Opinion Piece
- Example of Topic Outline
- Rubric for Writing an Opinion Piece

Instructional Information:

- There is a difference between fact and opinion.
- An opinion piece is always written in the first person.
- It expresses a specific opinion on a topic.
- Analyzing arguments for and against a specific position often helps to clarify thought.
- Structurally it consists of an introductory paragraph which states the opinion; a body of paragraphs that consist of arguments and supporting points; and a concluding paragraph that summarizes the opinion.

Procedure:

Class discussion:

What is a fact?

What is an opinion?

What is a topic about which you have a strong opinion?

Why do people have strong opinions or feelings about certain topics?

Where and how do people voice their opinions?

Teach the elements and structure of an opinion piece using Student Instructions for Writing an Opinion Piece.

Activity 1

Select a controversial topic such as year round schooling, mandatory school uniforms, or curfews.

As a class, complete the *Overhead Figure 3: What is Your Opinion?*

In small groups, complete Student Activity Sheet 5: The Topic Outline.

Share results.

Activity 2

Set up and have students participate in the four corners activity. The teacher gives the statement: The benefits of mining out weigh the damage to the environment. The four corners of the room are designated: Strongly Agree, Strongly Disagree, Mildly Agree, and Mildly Disagree. Students move to the location in the classroom that matches their opinion. Students then generate three arguments to support their opinion. A spokesperson from each corner will share the arguments with the intent of persuading others to change their position. Students may go to other corners if their opinions are swayed. Students who have changed to a new corner will share the reasons why they have changed their opinion.

Activity 2 Example of Four Corners

Strongly Agree

Mildly Agree

The damages out weigh the benefits of mining.

Mildly Disagree

Strongly Disagree

Activity 3

Students select one of the four categories reflecting the four points of view: Business, Environmentalist, First Nations, and Government. In pairs, the students will discuss the arguments both for and against their selected point of view. They will each complete the Students Activity Sheet 4 and Student Activity Sheet 5.

Activity 4

Review the elements for writing an opinion piece using Student Instructions for Writing an Opinion Piece. Students will write an opinion piece based on the information they have organized in Activity 3.

STUDENT INSTRUCTIONS For an OPINION PIECE

An opinion piece is written in the first person (I) and expresses a particular opinion on a topic.

An opinion piece should include:

1. Introductory Paragraph:

In your introductory paragraph you need to include a clear statement of your position on an issue. The writer must have a clear sense of audience. Who is the reader of the opinion piece?

2. Body:

Your paragraph should flow logically from one to the next with connecting ideas and transition words. Be sure that your ideas are clearly explained so that the reader can understand your opinion.

In the paragraphs, you would discuss different reasons why you feel the way that you do, providing proofs, illustrations, or examples to support those reasons.

3. Conclusion:

In your final paragraph, try to conclude your thoughts. You restate your opinion and summarize your major reasons for holding that opinion. The conclusion must contain an even stronger argument to make readers think about the issue after they have finished reading. It often ends with a call to action, a challenging question, or a summary of the main arguments.

OPINION STRUCTURE

Introductory Paragraph: This is a statement of your opinion.
Body: Discuss different reasons why you feel the way you do with support examples, details, and/or proofs. <div style="text-align: center; padding-left: 40px;">1st paragraph – 2nd strongest opinion 2nd paragraph – weakest opinion 3rd paragraph – strongest opinion</div>
Conclusion: This paragraph summarizes the major reasons why you feel the way you do.

School uniforms would make school a more welcoming place for students

Arguments	Details
Uniforms will stop other students from being judged on how they look.	<p>Students often judge others by their clothing's logo, style, colour and expense; uniforms will eliminate this discrimination. Uniforms will allow all students to participate equally in the formation of a school identity.</p> <p>For students with limited resources, uniforms can be provided so that they don't stand out.</p> <p>Students will be able to look beyond style to see the whole person.</p>
Uniforms will save families money.	<p>Students will not have to have a different outfit for every day of the week; parents will only have to buy a limited number of sets of clothes.</p> <p>Parents will be able to hand down uniforms to younger siblings.</p> <p>Uniforms can be selected that are economic for all parents.</p>
Uniforms will make it easier to identify those who are not from the school and will therefore increase security and safety.	<p>It will be clear to all school personnel who belongs and who doesn't.</p> <p>Uniforms will provide a sense of identity and belonging for students who do not automatically feel 'part of the environment'. The sense of belonging will increase pride and ownership in school community, and will reduce the likelihood of both inside and outside ability to commit vandalism and destruction of school property.</p>

With permission from
Upper Canada District School Board
The Writing the Wave to Success page 27
<http://www.ucdsb.on.ca/>

The Great Debate

Material and Resources:

- *Overheads Figure 4 and 5*
- Completed Student Activity Sheets 4 and 5, articles, opinion pieces additional research
- Student Activity Sheet 6
- Debate Rubric 4
- Cue cards

Instructional Information:

- A debate is a structured argument that allows for a full vetting of an issue and/or idea.
- A debate has a structured format and time restraints.
- The purpose of a debate is to persuade others to support your point of view.
- Two teams speak alternately “for” and “against” a position on an issue.
- Opinions must be supported with facts.
- Team members must be careful not to contradict each other.
- Respect must be shown for the other team.
- Students must listen carefully to what the other team says in order to identify generalizations or falsehoods and to effectively rebut.

Procedure:

Introduce this activity to students by explaining the concept of a debate and discussing different places where debates are used: House of Commons, Provincial Legislative Assembly, competitions etc.

Use *Overhead figure 4 and 5* to discuss a debate.

Organize teams of four or five students. Assign an equal number of teams to represent those “for” and “against” the issue. Students in each group organize so that they share the responsibilities for the introduction, the argument, the rebuttal and the conclusion.

Hand out Fact sheets A and B to respective teams.

Each member of a team completes Student Activity Sheet 6.

Students may refer to the reading Student Activity Sheets, articles, Student Activity Sheets 4 and 5 and may do additional research.

Use *Overhead Figure 6* to discuss *Presentation Skills and Rubric 4* to discuss evaluation.

Make a schedule for teams to take part in the debate.

Fact Sheet A

Position: “Against” the development of a mine in North-Eastern Ontario

Situation:

Exploring for diamonds in the James Bay lowlands has produced encouraging results. DE BEERS Canada has discovered an area that contains a sufficient number and value of diamonds to develop a mine. The site would cover an area of 5,000 hectares. The open pit would be 220 metres deep and 1 kilometre wide.

The area supports abundant wildlife, including threatened woodland caribou, healthy fisheries, clean and plentiful water, and sustains the traditional activities of First Nations’ communities. The area is home to the Attawapiskat community of First Nations who live both on-reserve and off-reserve.

The company has already spent \$140 million, much of this directly in Northern Ontario, to develop the project. The company has been given permission to pump 100,000 cubic metres of water out of a river each day. They are asking for approval to construct roads, divert a river and build a barge landing in James Bay. The company has received conditional approval for the \$982 million dollars to build the mine.

An agreement with the company sets out the benefits the community will receive from the project. It includes commitments from the company regarding training and education, employment and business opportunities, environmental management, social and cultural issues and financial compensation. The agreement details how impacts will be lessened.

The community voted on an agreement with the company: 85.5% voted in support of the agreement. There were 1 600 members eligible to vote. Out of 315 people who voted, 268 were in favour and 47 were opposed.

The mine will employ about 600 people during construction and 400 permanent positions will be created during operations. About 12% of the jobs will go to First Nations people.

It is estimated that the mine will last for 12 years. There is a good chance that this project will be expanded for two to four years if more diamonds are discovered in the region.

Those “against” the mine say:

- The area is one of the largest, intact wilderness areas left on earth with no industrial development.
- The associated road and hydro corridors from the coastal community will spread the mine’s ecological impact over an even larger area and will bisect intact wilderness.
- The community uses the existing winter road along the James Bay coast infrequently. Upgrading it will spread the ecological footprint of the mine.
- The ecological footprint is much larger than the mine site. The footprint will be 260,000 hectares -- an area roughly four times the size of the City of Toronto.
- 1.2 million m³ of muskeg, including trees and other plants, will be removed.
- 28.7 million tonnes of rock would have been dug from the ground over the life of the mine and dumped in the surrounding area.

- The area supports abundant wildlife, including threatened woodland caribou, healthy fisheries, clean and plentiful water, and sustains the traditional activities of First Nations. The mine will cause serious harm to the traditional livelihoods of northern First Nations people by impacting on fish and wildlife populations.
- The habitat that previously supported caribou (older forest and bogs) will be diminished. This will result in the local extinction of caribou.
- Trucks bringing supplies and materials to and from the mine site (60 trucks per day) would negatively impact wildlife behaviour.
- After the mine closes, people will be left with skills they can only use if they move away.
- Dewatering of the mine will pump 100 000 cubic metres of salty water per day (the equivalent of 40 Olympic-sized swimming pools of salty water per day or 14 600 pools per year). This will affect fish populations.
- The waste rock may leach chemicals, such as acids, into the surrounding water.
- The impacts will last far longer than the mine's operational life -- the mine would only produce diamonds for 12 years, but its environmental impacts may last generations.
- The Comprehensive Study Report states. “[the mine] will result in very substantial overall social change . . . the project has the potential to result in increased inter and intra-community conflict and security issues, and substance(s) abuse, flowing from income disparity, inflationary pressures and potential in-migration of current non-resident community members.”
- There will only be 12% of the staff employed will be from the community. There will be huge differences in income.²⁹

²⁹ Maurino Romina, Ont. activists seek to halt diamond mine, Canadian Press
<http://www.canada.com/national/nationalpost/news/toronto/story.html?id=673ca200-4623-46df-9654-8a7bcef7639b> Monday, September 05, 2005

Fact Sheet B

Position: “For” the development of a mine in North-Eastern Ontario

Situation:

Exploring for diamonds in the James Bay lowlands has produced encouraging results. DE BEERS Canada has discovered an area that contains a sufficient number and value of diamonds to develop the Victor mine. The site would cover an area of 5 000 hectares. The open pit would be 220 metres deep and 1 kilometre wide.

The area supports abundant wildlife, including threatened woodland caribou, healthy fisheries, clean and plentiful water, and sustains the traditional activities of First Nations’ communities. The area is home to the Attawapiskat community of First Nations who live both on-reserve and off-reserve.

The company has already spent \$140 million, much of this directly in Northern Ontario, to develop the project. The company has been given permission to pump 100 000 cubic metres of water out of a river each day. They are asking for approval to construct roads, divert a river and build a barge landing in James Bay. The company has received conditional approval for the \$982 million dollars to build the mine.

An agreement with the company sets out the benefits the community will receive from the project. It includes commitments from the company regarding training and education, employment and business opportunities, environmental management, social and cultural issues and financial compensation. The agreement details how impacts will be lessened.

The community voted on an agreement with the company: 85.5% voted in support of the agreement. There were 1 600 members eligible to vote. Out of 315 people who voted, 268 were in favour and 47 were opposed.

The mine will employ about 600 people during construction and 400 permanent positions will be created during operations. About 12% of the jobs will go to First Nations people.

It is estimated that the mine will last for 12 years. There is a good chance that this project will be expanded for two to four years if more diamonds are discovered in the region.

Those “for” the development of a mine say:

- An existing winter road along the James Bay coast will be upgraded for heavy use by large haul trucks. This will improve transportation for communities.
- A new hydro corridor and access road from the coastal community to the mine site 90 kilometres away will be developed.
- An estimated 60 trucks per day will bring supplies and materials to and from the mine site.
- Better and more roads will increase access to the region and will increase hunting on game species. This will improve ecotourism.
- The mine will provide contracts for mine supply and services for larger communities in the region.
- The mine would bring increased traffic through First Nations communities.
- Communities will see economic benefits, in the form of employment and revenue sharing.
- The company given \$600,000 to construct a training centre that will help community members prepare for employment at the mine.

- The training centre will contribute to the community's economic viability, resource employment and community development.
- The company has provided \$50 000 towards an education program to upgrade the math, sciences and literacy programs at the high school level.
- The company states that the primary environmental considerations are water, fisheries, waste management as well as wildlife and habitat displacement.
- An environmental assessment (EA) must be completed and approved by the Federal Government before the mine is developed.
- The EA will provide the community the guarantee that the regulators are satisfied with the steps planned to address the environmental issues.
- Proper planning and rehabilitation upon closure of the mine will take place.
- Environmental monitoring will take place and continue several years after the mine closes.
- The mine site will be closed out responsibly and safely, and the environment will be protected.
- The company is conducting research into the re-vegetation of the site using native plants to ensure that no invasive species are introduced to the environment.³⁰

³⁰ De Beers Canada Inc website: http://www.debeerscanada.com/files_2/index_news-release_063005.html

Student Activity Sheets



Determining the Main Idea and Supporting Details

Name: _____ Date: _____

Title: _____

Style: _____

Author: _____

Point of view: _____

Read the first and last paragraph. In your own words, identify the main idea in a complete sentence.

In your own words, identify the details that support the main idea in point form.

- _____

- _____

- _____

- _____

- _____

All these details are about: _____

How do the details support the main idea?

READING ACTIVITY
DEVELOPING YOUR OWN POINT OF VIEW

Point of View	Strongest Argument	Weakest Argument	Interesting Argument	Rank
Government				
Environmentalist				
First Nations				
Business				

What do you think?

Rank the points of view according to your opinion using the scale of 1 to 4. Let 1 represent the point of view you agree with the most.

Conclusion: (Your opinion based on what you have read.)

Reading to Make Judgments and to Draw Conclusions

What does the article imply about the author and the organization with which he or she is associated? Support your answer with references to the article.

Author	Implications	References
Business		
Environmentalist		
First Nations		
Government		

Give reasons why you agree or disagree with the author's point of view?

What is Your Opinion?

Business, Environmentalist, First Nations, Government

Circle the point of view that you agree with the most.

Consider the articles that you have read and discussions in which you have participated.

Record three arguments that support your selection.

Take into account that others may oppose your point of view.

Record three arguments that might be used against your position.

Arguments For:	Arguments Against:
<p>What is your opinion?</p> <hr/> <hr/> <hr/>	

* How would knowing the argument against your opinion be beneficial to you?

Student Activity Sheet 4

Overhead Figure 3

THE TOPIC OUTLINE

Introduction (State topic and opinion)	
Argument	Supporting Points <ul style="list-style-type: none">••••••
Argument	Supporting Points
Argument	Supporting Points
Conclusion (restate your opinion)	

THE GREAT DEBATE

Team members: _____

Position: ‘FOR’ OR ‘AGAINST’

Opening Statement Presenter: _____

Gather the main arguments into an introductory statement. Do not give specific information, just give your team’s three strongest arguments: “This is true because of A and B and C.”

1. _____

A. _____

B. _____

C. _____

Topic Presenters: _____

Present the main arguments for the team. Each presenter gives 2 or 3 specific details that prove A and B and C.

1. _____

2. _____

3. _____

Rebuttal

Answer the arguments given by the other team. Presenters must take notes as the other team is speaking. Prepare to respond to every argument, using specific information to disprove them.

1. _____

2. _____

Closing Statement Presenter: _____

Present the closing arguments for the team. Repeat the main idea for this and this and this reasons.

1. _____

A. _____

B. _____

C. _____

Overheads



Skimming Strategies

Look at the illustrations. Highlight captions, and titles for charts and graphs.

Read and highlight:

- **the title, subtitles and heading;**
- **the first and last paragraphs;**
- **the first sentence of each paragraph;**
- **dates, numbers and proper nouns;**
- **bold text, italics, and coloured and underlined text.**

Notice and highlight key words that are repeated throughout the text.

Reading for Main Idea and Supporting Details

- 1. Read the first and last paragraph.**
- 2. Write down the main idea in your own words.**
- 3. Read each paragraph. Stop after each paragraph and put into your own words any details that support the main idea.**
- 4. After you have finished, describe how the details support the main idea.**

Example:

The main idea (reoccurring issue) that is raised is...

The details that relate to the main idea are...

The details support the idea that...

What is Your Opinion?
Business, Environmentalist, First Nations, Government

Circle the point of view that you agree with the most.

Consider the articles that you have read and discussions in which you have participated.

Record three arguments that support your selection.

Take into account that others may oppose your point of view.

Record three arguments that might be used against your position.

Arguments For:	Arguments Against:
<p>What is your opinion?</p> <hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/> <hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/> <hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/>	

*How would knowing the argument against your opinion be beneficial to you?

What is a Debate?

- **A debate is a structured argument.**
- **The purpose of a debate is to persuade others to support your point of view.**
- **Two teams speak alternately, one “for” and one “against,” on a specific issue.**
- **Debaters must support opinions with facts.**
- **Debaters must be careful not to contradict their own team members.**

A Debate Has Very Strict Rules

- **No shouting**
- **No refusing to listen**
- **No interrupting**
- **You must raise your hand if it’s not your time to speak**
- **No whispering while another speaker is talking**

Overhead Figure #4

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web site address: www.pembina.org

Learning from a Debate

A debate:

- **Is an intellectual exercise to allow for a full vetting of an issue and/or idea;**
- **Teaches you to listen carefully to what others say and to structure in your mind what has been said, in order to effectively rebut;**
- **Teaches you to critically and logically evaluate what others say and to identify generalizations or falsehoods.**

Times

Opening statements for both sides - 3 minutes each

Arguments for both sides - 3 minutes each

Rebuttal conference - 2 minutes

Rebuttals - 2 minutes each

Closing statements for both sides - 3 minutes each

Overhead Figure #5

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web site address: www.pembina.org

PRESENTATION SKILLS

- STYLE:** The manner in which you communicate your arguments will influence how the audience perceives your arguments.
- SPEED:** Speak at an appropriate speed so you can breathe comfortably while speaking, but do not speak so slowly that the audience loses interest.
- tone:** Your voice should be varied, with inflections – do not speak in a slow, monotone voice.
- VOLUME:** Speak with a volume that allows the audience to hear clearly what you are saying. Do not shout.
- DICTION:** Pronounce your words clearly, avoid slang and use language at a level appropriate to your audience.
- CLARITY:** Be accurate and precise in your speech.
- HUMOUR:** Injecting humour in your rebuttal can be effective, but use it wisely as it can detract from your rebuttal.
- FACIAL EXPRESSIONS, STANCE, and GESTURES:** Avoid excessive facial expressions – use them only when appropriate. Don't over-gesticulate, but do not stand rigid –

BE COMFORTABLE AND CONFIDENT!

**** Have some notes with you that are brief and organized. Use notes as a reference only – DO NOT READ.**

Overhead Figure #6

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web site address: www.pembina.org

Rubrics



Reading Rubric

The student:

	Level One	Level Two	Level Three	Level Four
Reasoning and Critical Thinking	<ul style="list-style-type: none"> - with assistance, identifies the main idea and supporting details and explains how details support the main idea - makes judgements and draw conclusions about ideas with limited understanding and no consistency - clarifies and develops own points of view with a limited understanding - selects and uses appropriate reading strategies with assistance 	<ul style="list-style-type: none"> - with limited assistance, identifies the main idea and supporting details and explains how details support the main idea - makes judgements and draw conclusions about ideas consistently and with limited understanding - clarifies and develops own points of view with some understanding - selects and uses appropriate reading strategies with limited assistance 	<ul style="list-style-type: none"> - independently identifies the main idea and supporting details and explains how details support the main idea - makes judgements and draw conclusions about ideas consistently and with general understanding - clarifies and develops own points of view with general understanding - selects and uses appropriate reading strategies independently 	<ul style="list-style-type: none"> - independently identifies the main idea and supporting details and explains how details support the main idea - makes judgements and draw conclusions about ideas consistently and with thorough understanding - clarifies and develops own points of view with thorough understanding - selects and uses appropriate reading strategies independently and confidently
Understanding form and style	<ul style="list-style-type: none"> - shows limited understanding of various forms of writing and describes their key features with assistance 	<ul style="list-style-type: none"> - shows limited understanding of various forms of writing and describes their key features independently 	<ul style="list-style-type: none"> - shows general understanding of various forms of writing and describes their key features independently 	<ul style="list-style-type: none"> - shows thorough understanding of various forms of writing and describes their key features independently
Vocabulary	<ul style="list-style-type: none"> - uses few strategies to determine the meaning of unfamiliar words 	<ul style="list-style-type: none"> - uses some strategies to determine the meaning of unfamiliar words 	<ul style="list-style-type: none"> - uses strategies to determine the meaning of unfamiliar words. 	<ul style="list-style-type: none"> - uses strategies effectively to determine the meaning of unfamiliar words
Uses of Conventions	<ul style="list-style-type: none"> - uses few conventions to locate information 	<ul style="list-style-type: none"> - uses some conventions to locate information 	<ul style="list-style-type: none"> - uses most conventions to locate information 	<ul style="list-style-type: none"> - uses conventions effectively to locate information

Writing an Opinion Piece Rubric

The student:

Categories	Level one	Level Two	Level Three	Level four
Reasoning - complexity of ideas - exploration and clarification of personal opinion about a topic of controversial interest - number and relevance of supporting details	- writes few simple underdeveloped ideas - states facts about topic but shows little understanding of it - provides few facts supporting his/her point of view	- writes and develops a variety of simple ideas - shows some understanding of controversial nature of topic - provides some supporting evidence for his/her point of view	- writes and develops ideas of some complexity shows understanding and personal concern about controversial topic - supports his/her point of view with relevant facts	- develops ideas fully to create a greater understanding - shows thorough understanding of and personal commitment to opinion about controversial topic - supports his/her point of view fully relevant facts
Communication - purpose - clarity and precision of ideas - word use and vocabulary - sentence variety (structure, type, length)	- states facts - contains few clearly stated ideas or facts - vocabulary not suited to audience and purpose - relies on one sentence type	- attempts to persuade - contains some clearly stated facts and ideas; may be repetitive - vocabulary somewhat suited to audience and purpose - contains a variety of sentence types	- is persuasive - most facts and ideas are clearly stated - contains vocabulary that is well suited to audience and purpose - contains a wide variety of appropriate sentence types	- is highly persuasive - all ideas are clearly and concisely stated - vocabulary shows sensitive and sophisticated awareness of audience and purpose - sentence variety is used with a high degree of effectiveness

In the student's work:

Organization - overall structure (introduction, body, conclusion)	- there is no clear organization or structure - very little attempt is evident to define the topic in the opinion - there is no clear summary or conclusion to the argument	- there is some evidence of a structure or organization - the topic is mentioned but not clearly defined - some attempt has been made to conclude or summarize the topic and opinion	- the organization is logical and appropriate - the topic is defined in the introduction and the opinion made clear; the introduction and the conclusion are connected - the final paragraph/statement summarizes the opinion and topic, and may suggest further action	- the organization supports the purpose and enhances the argument - the introduction clearly defines the topic, state the author's point of view and captures the reader's interest with a high degree of effectiveness - the topic and point of view is effectively summarized and the conclusion is clear and compelling
Conventions - grammar, spelling and punctuation	- there are several major errors	- there are several minor errors	- there are few errors	- there are no significant errors

Rubric 2

With permission from
 Upper Canada District School Board
 The Writing the Wave to Success page 28
<http://www.ucdsb.on.ca>

DEBATE RUBRIC

Category					Score
Content	1	2	3	4	
Opening statements	Position not stated	Position stated but unclear	Position stated clearly	Position stated clearly and effectively	
Addresses Issues	Did not address topic	Rarely addressed topic	Usually addressed topic	Always addressed topic	
Support with Facts	Did not use facts to support topic	Used few facts to support topic	Used some facts to support topic	Used many facts to support topic	
Persuasiveness	Arguments were not clear	Arguments were seldom clear	Arguments were frequently clear	Arguments were clear and convincing	
Rebuttal	Did not respond to arguments	Responded to some arguments	Responded to most arguments	Responded to arguments effectively	
Closing remarks	Position not summarized	Position summarized but unclear	Position clearly summarized	Position summarized clearly and effectively	
Team Delivery					
Oral Expression	Difficult to hear	Volume and effectiveness inconsistent	Usually effective and easily heard	Always effective and easily heard	
Followed rules of debate	Did not follow rules	Seldom followed rules	Usually followed rules	Always followed rules	
Teamwork	Did not work as a team	Worked as a team occasionally	Usually worked as a team	Always worked as a team	

TOTAL _____

Grade 7 Geography

The student:

	Level 1	Level 2	Level 3	Level 4
Understanding of Concepts	- shows understanding of few of the concepts of the interaction theme	- shows understanding of some of the concepts of the interaction theme	- shows understanding of most of the concepts of the interaction theme	- shows understanding of all (or almost all) of the concepts of the interaction theme
Applying Concepts and Skills in Various Contexts	- with assistance, communicates a limited understanding of the different opinions held on environmental issues	- communicates a limited understanding of the different opinions held on environmental issues	- communicates a general understanding of the different opinions held on environmental issues	- communicates a thorough understanding of the different opinions held on environmental issues
Inquiry/Research and	- applies few strategies to formulate questions to identify issues - defines simple problems only with assistance	- applies some strategies to formulate questions to identify issues - defines problems with frequent assistance	- applies most of the strategies to formulate questions to identify issues - defines problems with occasional assistance	- applies all (or almost all) of the strategies to formulate questions to identify issues - defines problems with little or no assistance
Communication Skills	- rarely communicates with clarity and precision	- sometimes communicates with clarity and precision	- usually communicates with clarity and precision	- always communicates with clarity and precision
Applying Concept and Skills in Various Contexts	- presents a point of view on how a resource should be used	- presents and defends a point of view on how a resource should be used	- presents and defends a point of view on how a resource should be used with clarity	- presents and defends a point of view on how a resource should be used with clarity and precision

Grade 7 Science and Technology

The student:

	Level 1	Level 2	Level 3	Level 4
Relating Science and Technology to the World Outside of School	<ul style="list-style-type: none"> - identifies few of the factors that must be considered in making informed decisions about land use - shows little understanding of the ways in which humans have altered the landscape - shows little understanding of the environmental and economic consequences of mining 	<ul style="list-style-type: none"> - identifies some of the factors that must be considered in making informed decisions about land use - shows a limited understanding of the ways in which humans have altered the landscape - shows some understanding of the environmental and economic consequences of mining 	<ul style="list-style-type: none"> - identifies most of the factors that must be considered in making informed decisions about land use - shows an understanding of the ways in which humans have altered the landscape - shows understanding and assesses some of the environmental and economic consequences of mining 	<ul style="list-style-type: none"> - identifies all (or almost all) of the factors that must be considered in making informed decisions about land use - shows a thorough understanding of the ways in which humans have altered the landscape - shows understanding and assesses the environmental and economic consequences of mining

Glossary

<i>abandoned</i>	To give up by leaving or ceasing to operate or inhabit; to surrender one's claim to, right to, or interest in; give up entirely;
<i>accountable</i>	Obligated to accept responsibility;
<i>adhere</i>	To stick fast to a person, party or opinion;
<i>adverse</i>	Opposed, hostile, like an adverse opinion or adverse to our interests;
<i>after-effects</i>	Consequences or results produced;
<i>aggregates</i>	Rock, mineral particles, or a mixture of both; hard materials such as sand, gravel, crushed stone that can be used to form cement or plaster in construction;
<i>application</i>	Bearing of a thing, sense in which it should be applied;
<i>capacity</i>	The amount that can be held; e.g. the glass was filled to capacity;
<i>consultation</i>	To seek information or advise;
<i>contaminate(d)</i>	To make impure or unclean by contact or mixture; contaminate, poison, pollute, taint;
<i>corporate</i>	Formed into a corporation;
<i>corporate social responsibility</i>	The way in which a company balances the economic, environmental and social objectives;
<i>cyanide</i>	A colourless, poisonous gas
<i>dependency</i>	The state of being dependent on another person, state or country;
<i>diminish</i>	To lessen;
<i>disruption</i>	To throw into confusion or disorder; to interrupt or impede the progress, movement, or procedure of;
<i>ecotourism</i>	Tourism based on the ecology of a place;
<i>emissions</i>	To give out, put forth;
<i>enhancing</i>	To heighten, intensify, or exaggerate;
<i>environmental</i>	Relating to or being concerned with the ecological impact of altering the environment; "environmental pollution";
<i>equitable</i>	Fair, just;
<i>ethical</i>	Moral principles;
<i>evolution</i>	Advancement or progression;
<i>extract(ed)</i>	To take out;
<i>footprint</i>	A designated area affected or covered by a device or phenomenon; the area taken up by some object;
<i>governance</i>	Manner or function of rule with authority;
<i>impact</i>	Collision, striking on or against;
<i>inconsistent</i>	Conflicting, disconnected; not in keeping with;
<i>indispensable</i>	Essential;

<i>infrastructure</i>	Communication and transportation network;
<i>infringement</i>	Intrusion;
<i>innovation</i>	Novelty;
<i>integration</i>	Mixing, combination;
<i>leaching</i>	Permeate or penetrate gradually;
<i>lobby</i>	A group of persons engaged in trying to influence legislators or other public officials in favour of a specific cause;
<i>on-reserve</i>	Living on a reserve;
<i>oxymoron</i>	Figure of speech using opposites;
<i>per se</i>	As such;
<i>potential</i>	Possible, likely;
<i>remediation</i>	Act of correcting an error or a fault or deficiency;
<i>responsible mining</i>	Mining practices that are based on or characterized by good judgment, sound thinking and scientific research;
<i>self-governing</i>	Independent;
<i>shareholder</i>	Investors, regulators, employees, municipalities and non-government organizations;
<i>silt</i>	Deposit of mud or sludge;
<i>social transfer payments</i>	Portions of proceeds going to social groups;
<i>stakeholders</i>	Those who hold a vested interest;
<i>stewardship</i>	The office and duties of a steward to maintain or look after a certain interest;
<i>stringent</i>	Severe or strict;
<i>sustainable</i>	To keep from falling or sinking or failing, enable to last out;
<i>systematically</i>	Thoroughly or methodically;
<i>tailings</i>	The rock that is ground up to extract the ore, usually mixed with chemicals;
<i>transition</i>	Passage from one state to another;
<i>transparent</i>	Clear, apparent, visible;
<i>Treaty</i>	A formally signed contract between persons or groups;
<i>toxic</i>	Capable of causing injury or death, especially by chemical means; poisonous;
<i>trauma</i>	Shock, damage;
<i>viable</i>	Feasible;