


Showing Your Love...Are Diamonds a Girl's Best Friend?

CARC Social Studies

Please note, all support materials are after the lesson plan template and begin on page 8. Each support page is linked in the lesson plan. Click on the red push pin () in each support to return to the lesson plan template.

Grade Level	10 – 1	Related Issue 3	To what extent does globalization contribute to sustainable prosperity for all people? General Outcome: Students will assess economic, environmental and other contemporary impacts of globalization.
Time Frame	5 – 6 classes	Enduring Understanding (purpose of the lesson)	Students are asked to help a friend decide if Canadian Diamonds are a good choice for their friends who are getting engaged or married. Ultimately students decide if the processes followed by the Canadian diamond industry should be adopted as a model for other countries.
Developed By	Kathleen Galloway, Christa Henderson, Leigh Kvill, Ron Thompson		
Critical Challenge/Big Idea	Students will determine the extent to which the Canadian Diamond industry should serve as a model for other countries by following the Kimberley Protocol.		
Values and Attitudes Outcomes	Knowledge and Understanding Outcomes	Skills and Processes Outcomes	
3.1 recognize and appreciate alternative viewpoints that exist with respect to the relationships among politics, economics, the environment and globalization (GC, ER, PADM) 3.2 recognize and appreciate impacts of globalization on the interdependent relationships among	3.3 explore understandings of contemporary economic globalization (GC, ER) 3.5 analyze factors contributing to the expansion of globalization since the Second World War (international agreements, international organizations, transnational corporations, media and transportation technologies) (TCC, GC, ER, PADM)	develop skills of critical thinking and creative thinking: S.1.1 evaluate ideas and information from multiple sources S.1.6 synthesize information from contemporary and historical issues in order to develop an informed position S.1.9 analyze current affairs from a variety of perspectives develop skills of historical thinking: S.2.1 analyze multiple historical and contemporary perspectives within and across cultures	

<p>people, the economy and the environment (GC, ER, PADM)</p>	<p>3.6 analyze political and economic challenges and opportunities of globalization (trade liberalization, foreign investment, economic growth, privatization, outsourcing, knowledge economy) (ER, PADM, GC)</p> <p>3.7 explore multiple perspectives regarding the relationship among people, the land and globalization (spirituality, stewardship, sustainability, resource development) (LPP, CC, ER, GC)</p> <p>3.8 evaluate actions and policies associated with globalization that impact the environment (land and resource use, resource development agreements, environmental legislation) (LPP, ER, GC)</p> <p>3.9 analyze multiple perspectives on sustainability and prosperity in a globalizing world (ER, LPP, GC)</p>	<p>S.2.7 develop a reasoned position that is informed by historical and contemporary evidence</p> <p>develop skills of geographic thinking:</p> <p>S.3.2 make inferences and draw conclusions from maps and other geographical sources</p> <p>S.3.4 develop and assess geographic representations to demonstrate the impact of factors of geography on world events</p> <p>S.3.5 assess the impact of human activities on the land and the environment</p> <p>S.3.6 assess how human interaction impacts geopolitical realities</p> <p>demonstrate skills of decision making and problem solving:</p> <p>S.4.1 demonstrate leadership in groups to achieve consensus, solve problems, formulate positions, and take action, if appropriate, on important issues</p> <p>S.4.3 generate and apply new ideas and strategies to contribute to decision making and problem solving</p> <p>□ S.4.4 use appropriate tools and materials in order to accomplish a plan of action</p> <p>demonstrate skills of cooperation, conflict resolution and consensus building:</p> <p>S.5.5 respect the needs and perspectives of others</p> <p>S.5.6 collaborate in groups to solve problems</p> <p>develop age-appropriate behaviour social involvement</p> <p>S.6.2 acknowledge the importance of multiple perspectives in a variety of situations</p> <p>apply the research process:</p> <p>S.7.1 develop, express and defend an informed position on an issue</p> <p>S.7.3 draw pertinent conclusions based upon evidence derived from research</p> <p>S.7.6 integrate and synthesize argumentation and evidence to provide an informed opinion on a research question or issue of inquiry</p>
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| | | <p>S.7.8 select and analyze relevant information when conducting research</p> <ul style="list-style-type: none"> □ S.7.11 generate new understandings of issues by using some form of technology to facilitate the process □ S.7.12 record relevant data for acknowledging sources of information, and cite sources correctly □ S.7.13 respect ownership and integrity of information <p>demonstrate skills of oral, written and visual literacy:</p> <p>S.8.1 communicate effectively to express a point of view in a variety of situations</p> <p>S.8.2 use skills of formal and informal discussion and/or debate to persuasively express informed viewpoints on an issue</p> <p>S.8.3 ask respectful and relevant questions of others to clarify viewpoints</p> <p>S.8.4 listen respectfully to others</p> <p>S.8.5 use a variety of oral, visual and print sources to present informed positions on issues</p> <ul style="list-style-type: none"> □ S.8.6 apply information technologies for context (situation, audience and purpose) to extend and communicate understanding of complex issues □ S.8.11 apply principles of graphic design to enhance meaning and engage audiences <p>develop skills of media literacy:</p> <ul style="list-style-type: none"> □ S.9.2 evaluate the validity of various points of view presented in the media □ (focus) S.9.5 demonstrate discriminatory selection of electronically accessed information that is relevant to a particular topic |
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Note: not all skills outcomes listed are assessed; only those whose numbers are in bold text. The rubric and activities, however, can be modified to assess those skills whose numbers are in plain text depending on the focus of the assignment.

Summative Assessment Strategies	Diamond Buying Recommendation Rubric Round Table Discussion Oral Rubric (below)
Background Information	<p>Kimberley Facts: http://www.go2africa.com/south-africa/kimberley</p> <p>Ekati Diamond Mine. Informational topics available in the left menu: http://www.bhpbilliton.com/bb/ourBusinesses/diamondsSpecialtyProducts/ekatiDiamondMine/aboutEkati.jsp</p> <p>This page (below) allows students to explore the Ekati Diamond mine and the Kimberley Diamond mine using Google Earth: Google Earth Exploration of Two Diamond Mine Communities</p>
Introductory Activity/ The Hook	<p>Activity 1: What is it about diamonds?</p> <ol style="list-style-type: none"> 1. Introduce students to the critical challenge by playing a clip from "Diamonds are a girl's best friend" (from Moulin Rouge). Brainstorm as a class, possible responses to the following questions. <ul style="list-style-type: none"> • Why are diamonds so popular? • Why are they so valuable? • What else are diamonds used for? • What negative sides do we know exist regarding diamonds? <p>Suggest to students that the answers to these questions will act as guidelines as they conduct research on the diamond industry.</p>
Teaching/ Learning Strategies and Activities	<p>Activity 2: Researching the Diamond Industry</p> <ol style="list-style-type: none"> 2. In preparation to research the diamond industry ask students "As a citizen trying to be fair, practical, socially and environmentally conscious, if you were to purchase a diamond, what would you want to know before you made your purchase." (See KWL Chart) 3. Use the following media to have students research the diamond issue. (See "Resources" section for more information) <ul style="list-style-type: none"> • use this site which shows how a diamond mine works (Kimberley mining process) Global Eye: Focus on Diamonds http://www.globaleye.org.uk/secondary_spring06/focuson/index.html

- Use this site of video clips on blood diamonds
<http://www.history.com/videos/blood-diamond-a-diamond-in-the-hand#blood-diamond-a-diamond-in-the-hand>

As students conduct their research, have them record their findings on the [Note-Taking Sheet](#)

4. Ask students to research the following topics
 - slave-gun cycle, diamond-gun cycle
 - conflict diamonds
 - resource "rushes" (gold rush)
 - diamond mining in Canada
 - African diamond mining

Inform students that their research will be instrumental in the following role-play.

Activity 3: Taking a Role

5. Inform students that they will be assigned a role at a round table discussion to determine the extent to which Canada should be following the Kimberley Protocol.

Round table discussion:

- Hand out to each student a role card. Each role card contains a specific role and websites for researching. Roles include: [Diamond Company](#), [Environmental Services](#), [Government](#) and [Indigenous People](#). Also, each student should have a copy of the Kimberley Protocol (see reference)
- In groups of 4, students conduct their research and share information from their role card. Ask students to take notes during the discussion, using [Notes on Round Table Sheet](#).
- During round table sharing, ask students to refer to Kimberley protocol (see references) as they read the statements in the protocol and discuss the extent to which Canada is following the protocol. Ask them to cite examples from their role cards.
- You may want to provide students with additional research time to dig deeper into an aspect of the diamond mining industry in Canada which will support their position. They could take notes on the [Digging Deeper](#) sheet provided.
- You may wish to assess students in the activity ([Round Table Discussion Oral Assessment](#))

Activity 4: Making a Recommendation

	<p>6. Inform students that they will be making a recommendation to a friend whether or not to buy a Canadian diamond rather than a diamond from another country. Suggest to students that they consider criteria for a fair-minded recommendation, which might include</p> <ul style="list-style-type: none"> ● explanation of the issue ● balanced consideration of all views ● political and economic interests of all sides ● rights of individuals and countries involved ● consideration of price and availability <p>Ask students to share their recommendations in an oral and/or visual presentation to the class. (See assessment tools: Assessing choice, Diamond position evaluation, #4 Summative Assignment)</p>
<p>Resources</p>	<p>Resources for Background Information</p> <p>BHP Billiton. <i>About Ekati</i>. Retrieved March 25, 2010 from http://www.bhpbilliton.com/bb/ourBusinesses/diamondsSpecialtyProducts/ekatiDiamondMine/aboutEkati.jsp (Informational topics available in the left menu)</p> <p>Go2Africa Pty (2008). <i>Kimberley</i>. Retrieved March 25, 2010 from http://www.go2africa.com/south-africa/kimberley</p> <p>This page (below) allows students to explore the Ekati Diamond mine and the Kimberley Diamond mine using Google Earth: Google Earth Exploration of Two Diamond Mine Communities</p> <p>Resources for Activity 2</p> <p>Global Eye. (2006). <i>Focus on diamonds</i>. Retrieved March 25, 2010 from http://www.globaleye.org.uk/secondary_spring06/focuson/index.html</p> <p>History.com (1996) <i>Blood diamond: a diamond in the hand</i>. Retrieved March 25, 2010 from http://www.history.com/videos/blood-diamond-a-diamond-in-the-hand#blood-diamond-a-diamond-in-the-hand</p> <p>Resources for Activity 3</p> <p>Global Policy Forum. (2005). <i>Kimberly process</i>. Retrieved March 25, 2010 from http://www.globalpolicy.org/security/issues/diamond/kimberindex.htm</p>

	<p>(scroll down to "Kimberley Process Working Document (March 20, 2002)" for the final document produced by the Kimberley Process negotiations.)</p> <p>Global Witness. (2005). <i>Making it work: why the Kimberley process must do more to stop conflict diamonds</i>. Retrieved March 25, 2010 from http://www.globalpolicy.org/images/pdfs/stopconflict.pdf (page 8 of this document describes how the Kimberley Process should work. Go to bottom of the above page and click on "Download ready-made template for PowerPoint" as well as "Download links". Both can be used by students as they conduct their own inquiry into the diamond industry in Sierra Leone: http://www.globaleye.org.uk/secondary_spring06/focuson/conflictdiamonds.html</p> <p>Natural Resources Canada. (2009) <i>Canada: a diamond producing nation</i>. Retrieved March 25, 2010 from http://www.nrcan.gc.ca/smm-mms/busi-indu/dpn-npd-eng.htm</p> <p>Natural Resources Canada. (2006). <i>Diamonds</i>. Retrieved March 25, 2010 from http://www.nrcan-rncan.gc.ca/mms-smm/busi-indu/cmy-amc/2005revu/diam-eng.htm</p>
<p>Formative Assessment Strategies</p>	<p>Checklist</p>
<p>Extension Activity</p>	<p>You may want students to extend their learning by preparing and presenting a PowerPoint or other presentation to other classes or school, parent bodies.</p>

Adapted from: Wiggins, Grant and J. Mc Tighe. (1998). *Understanding by Design*, Association for Supervision and Curriculum Development ISBN # 0-87120-313-8 (ppk)

References:

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- The Diavik Diamond Mine (2009, June 4). *Environment*. Retrieved February 18, 2010 from <http://www.diavik.ca/environment.asp>

Diamond Buying Recommendation Rubric

Name : _____

Level Criteria	Sophisticated Understanding	Extended Understanding	Basic Understanding	Partial Understanding	Little Evidence of Understanding
Explains globalization challenges, actions and policies (3.3, 3.5, 3.6, 3.8)	Demonstrates an insightful understanding of the topic and/or text.	Demonstrates a well-considered understanding of the topic and/or text.	Demonstrates a defensible understanding of the topic and/or text.	Demonstrates a limited understanding of the topic and/or text.	Demonstrates a confused understanding of the topic and/or text.
Examines multiple perspectives (3.7, 3.9, S.1.9, S.2.1, S.6.2)	Includes pertinent information that clearly illustrates perspectives.	Includes relevant information that reasonably illustrates perspectives.	Includes general information that simplistically illustrates perspectives.	Includes sketchy information that does little to illustrate perspectives.	Includes trivial information that inaccurately illustrates perspectives.
Draws conclusions and supports recommendation (S.1.1, S.1.6, S.2.7, S.3.2, S.3.5, S.3.6, S.7.3, S.7.1, S.7.6, S.7.8)	Synthesizes information to develop a perceptive recommendation supported by significant evidence.	Synthesizes information to develop a convincing recommendation supported by relevant evidence.	Synthesizes information to develop a simplistic recommendation supported by general evidence.	Synthesizes information to develop a vague recommendation supported by weak evidence.	Synthesizes information to develop a ineffective recommendation, lacking supporting evidence.
Communicates information (S.8.1, S.8.5)	Communicates key information convincingly throughout the presentation that precisely considers purpose and audience.	Communicates key information persuasively throughout the presentation that effectively considers purpose and audience.	Communicates key information appropriately during the presentation that may consider purpose and audience.	Communicates key information predictably during the presentation that partially considers purpose and audience.	Communicates few ideas during the presentation that do little to consider purpose and audience.

ROUND TABLE DISCUSSION - ORAL ASSESSMENT

Content

- When marking **Content**, consider the quality of:
- understanding the topic
 - ideas that unify the presentation
 - support provided by the selection of details
 - making connections.

The student or group:

	Sophisticated Understanding	Extended Understanding	Basic Understanding	Partial Understanding	Little evidence of Understanding
Understanding the topic	reveals a comprehensive understanding of the topic	reveals a thoughtful understanding of the topic	reveals a conventional understanding of the topic	reveals a partial or limited understanding of the topic	reveals misunderstanding of the topic
Ideas unifying the presentation	provides specific, carefully chosen details	provides well-defined, appropriate details	provides adequate details	provides few details	provides so few details that the main ideas seem unsupported
Support	develops ideas effectively	develops ideas directly and supports them clearly	develops relevant ideas and supports them functionally	develops ideas inadequately	develops unclear or irrelevant ideas
Making connections	makes insightful personal or contextual connections with the topic	makes revealing personal or contextual connections with the topic	makes straightforward personal or contextual connections with the topic	makes superficial personal or contextual connections with the topic	makes limited or no personal or contextual connections with the topic

Google Earth Exploration of Two Diamond Mine Communities – Ekati Diamond Mine, NWT and Kimberly, South Africa –

Question One for Discovery:

Which location presents a greater challenge for minimizing human interference?

Use source to explore the following criteria for each location:
Google Earth: <http://www.earth.google.com>

1. Population Distance –
 - a) Fact - How close is the nearest major community?
 - b) Conclusion - What implication does this have for site security?
 - c) Conclusion - Where do you think it is likely the workers come from?
2. Population –
 - a) Fact - What is the population of the closest community?
 - b) Conclusion - How easily can the people access the site?
 - c) Conclusion - Do workers live at the site with their families?
3. Transportation Modes –
 - a) Fact - What infrastructure is in place to facilitate the movement of workers, supplies and product in and out of the area?
 - b) Conclusion - Can outside forces hinder transportation for their own gain?
4. Topography –
 - a) Fact - Describe the land surrounding the location.
 - b) Fact - Developed? Isolated?
 - c) Fact - Forested? Lakes and waterways?
 - d) Fact - Distance to ocean ports?
 - e) Conclusion - How might topographical factors complicate access to the area?
5. Size of Site –
 - a) Fact - Measure the width and length of the site.
 - b) Conclusion - How does the size complicate ability to secure the area?
6. Climate Zone –
 - a) Fact - What is the climate zone?
 - b) Conclusion - How does the climate affect ease of access to the area?

Bonus: Find own sources (2 or 3) – start with:
<https://www.cia.gov/library/publications/the-world-factbook/index.html>

7. Stability of Political Environment –
 - a) Fact - Type of government?
 - b) Conclusion - Are the workers isolated from local politics/ability to profit from theft?
 - c) Conclusion - How motivated are the people in contact with the mine to interfere?
 - d) Conclusion - How stable is the government? Police Force?
 - e) Conclusion - How secure is the area from invasion?
 - f) Conclusion - How likely are the local people to resort to arms to resolve conflict/control resources?

I have decided it is easier to minimize human interference with:

- o Ekati, NWT, Canada
- o Kimberly, South Africa

The advantages of my choice for minimal human interference are:

My choice of a more secure location has some disadvantages:

But the advantages of my choice are more important because:

Question Two for Discovery:

Observe visual environmental impact of
Ekati Diamond Mine, NWT, Canada

Vocabulary:

Kimberlite mine– inverted cone, pit mine shafts, surrounding a volcanic vent (vertical tubes of cooled volcanic lava) that remain where sufficient heat and pressure were present to cause carbon to diamondize. Generally areas of rich diamond deposit. Vehicle extraction paths spiral inward and down from ground-level edges.

Alluvial Till Mines – gravel from diamond rich deposits are sifted for diamonds.

1. 1991 Layer –
 - a) What do you see at the mine site?
 - b) Roads? Width (metres) and number?
 - c) Site Size? Numbers of buildings?
 - d) Airport?
2. 2000 Layer –
 - a) How many kimberlite shafts?
 - b) Roads?
 - c) Site Size?
 - d) Airport?

3. 2007 Layer –
 - a) How many kimberlite shafts?
 - b) Roads?
 - c) Site Size?
 - d) Airport?

Make notes on the progression of the observable impact the Ekati Diamond has had on the physical environment of the area. What impacts do you think you can't see from the satellite photo?

Google Earth Directions:

Google Earth's task pane is divided into three components:

- Search
- Place
- Layers

Search:

There are three tabs in the search pane:

- Fly To – most commonly used to find place by name or location
- Local Search – finds businesses
- Directions – shows how to get from place to place

Places:

Keeps track of places. A tour may be played by clicking the play button in the bottom right corner of the pane.

Layers:

Allows user access to different features of Google Earth. Geographic Information Systems are created by different organizations to communicate data.

- Core – default, shows standard stuff.
- Geographic Web – images other people have posted. Travel pictures.
- Featured Content – purchased space. Some sites have a newsy feel to them.
- Travel and Tourism – Ads.
- Global Awareness
- Google Earth Community – type of chat areas can be created.

Users need to filter through the information provided to receive non-bias data they want and can use.

One of the many useful tools on Google Earth is the measuring feature:

Under Tools, select measure. Users can measure the length of any object or distance in meters, kilometers, miles, etc. as the crow flies by clicking the mouse on the end points.

Users may also measure how "round about" directions from one place to another by using the path tab. Simply click, click, click on places one would have to go around objects to find out distances.

Travelling tools are at the bottom or side of the screen, depending on the mood of your computer.

KWH Chart

As a citizen trying to be fair, practical as well as socially and environmentally conscious, if you were to purchase a diamond, what would you want to know before you made your purchase.

K What I K now	W What I W ant to Know or What I W ant to Solve	H H ow will I find information? (Which resources, web pages, texts, formulas, methods, etc.)

Note Taking Sheet 📌

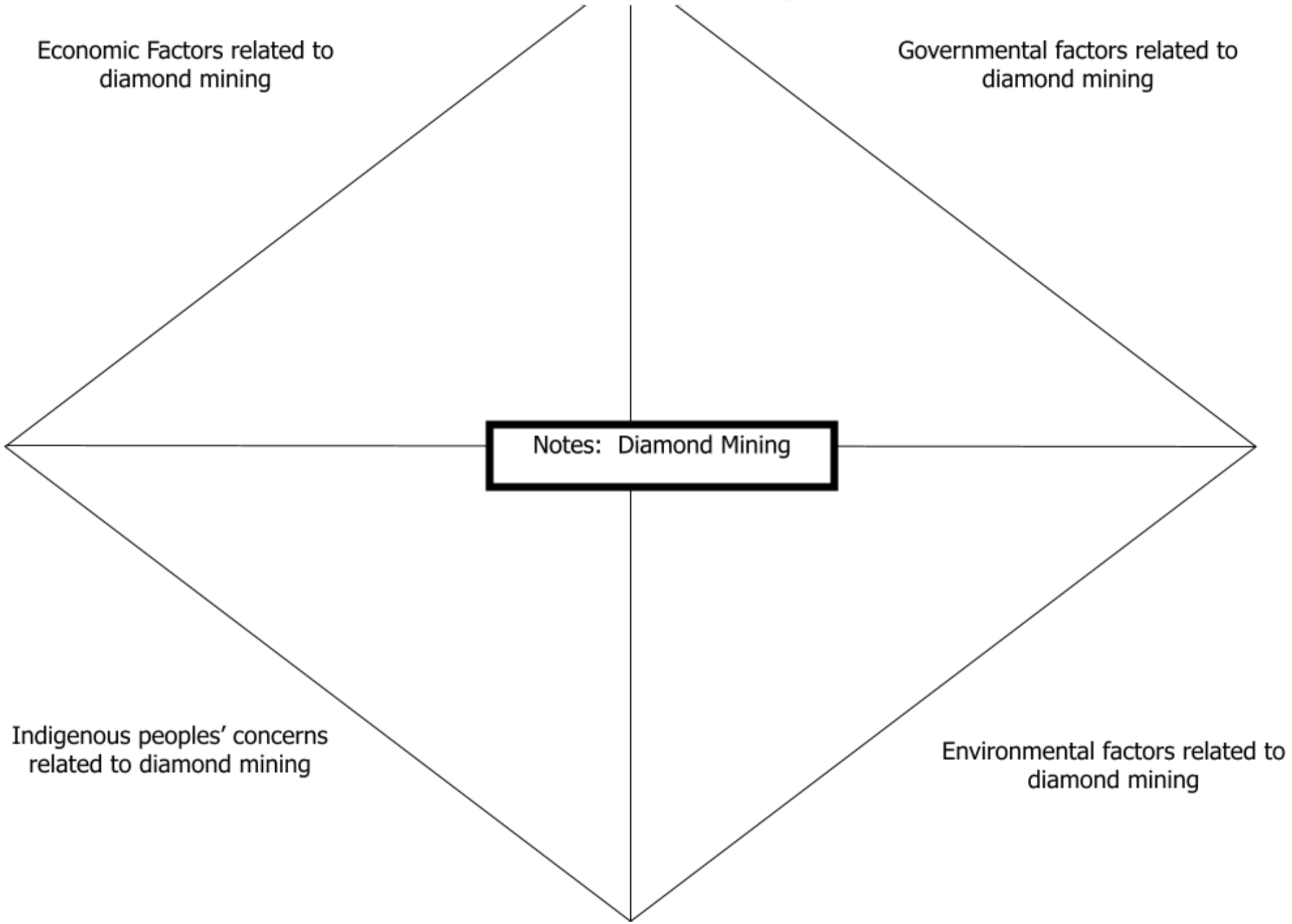
Economic Factors related to diamond mining

Governmental factors related to diamond mining

Notes: Diamond Mining

Indigenous peoples' concerns related to diamond mining

Environmental factors related to diamond mining



**CEO Don Lindsay
Teck Cominco Ltd**

"My view on diamonds is that Canada has been known to have diamonds for only 15 years," said Mr. Lindsay. "Now we have three new mines and a lot of knowledge. In 15 years, there will be another six mines opened."

"If we [Teck] get more confidence and understanding of this commodity, we may invest billions," he added.

(Francis, Diane (2007, February 2). Diamonds are Forever, *Financial Post*, para 5 and 6)

**Eira Thomas, and Catherine McLeod Seltzer
Stornoway Diamond Corp**

"Our plan is to acquire small and medium-sized assets," Ms. Thomas said in an interview. "One of the challenges is that exploring for diamonds takes a lot of time and lots of money. It's usually five to eight years to assess results."

Acquisitions have resulted in the company having several advanced- stage prospects plus a possible mine in Quebec.

Also good news is that diamonds will go up in value because the market is growing and "under supplied", she said.

"Diamonds are one of the few commodities where supply can be determined 10 years out because development is so slow. We know there are no big mines coming along in the world anywhere," she said.

"Today, the worldwide market is about US\$10-billion a year for rough diamonds and about US\$90-billion in diamond jewelry," she said.

(Francis, Diane (2007, February 2). Diamonds are Forever, para 11 – 15)

**CEO Jim Gowans
De Beers Canada's**

Geologically, Canada is blessed with some of the best prospects in the world. The diamond- prone portion of South Africa, where most of the world's diamonds have come from, is one million square kilometres in size while Canada's is 3.5-million square kilometres.

De Beers is very aggressive here. Of its world exploration budget of US\$90-million exploration, its Canadian subsidiary is spending US\$15-million

Canada has huge potential and the diamond business should grow about 3.5% this year or the same as world economic growth," said De Beers Canada's CEO Jim Gowans in a speech at the Roundup.

De Beers is 45% owned by Anglo American, 40% by the Oppenheimer family of South Africa and 15% by the Botswana government.

The exploration has benefited Yellowknife, which is in the midst of a mini economic boom. By 2008, diamond mines will employ 3,000 people directly in high-paying jobs and another 15,000 indirectly, said Mr. Gowans.

Last year, revenues jumped by 40% in 2006 to US\$1.6-billion for Canadian diamonds, slightly less than the US\$1.7-billion earned by South Africa.

"Canada is taking a leading position in the world's natural diamond production," said De- Beers' Mr. Gowans.

(Francis, Diane (2007, February 2). Diamonds are Forever, *Financial Post*, para 19 - 24)

DeBeers Job Fair Information

As the world's leading diamond mining company, De Beers is committed to the development of local policies and procedures to minimize the impact of mining on the natural landscape, and to ensure a safe and healthy environment for the communities in which we operate. De Beers' commitment to best environmental management practices has been recognized in other areas where we operate. We recognize that conditions in Canada are unique and we will strive to attain a comparable level of achievement in our Canadian Environmental Management System (EMS). At the end of 2001, all of De Beers' Canadian exploration offices achieved ISO 14001 (International Organization for Standardization) certification. This represents an important milestone in the company's environmental management program.

We recognize that all mining has an impact on the environment. Yet, with the careful planning to which De Beers Canada is committed, and through consultation with all of its stakeholders and community partners, the environmental disturbance caused by diamond exploration and activity can be minimized. De Beers Canada believes that potentially sensitive social and environmental issues must be identified early in the planning process.

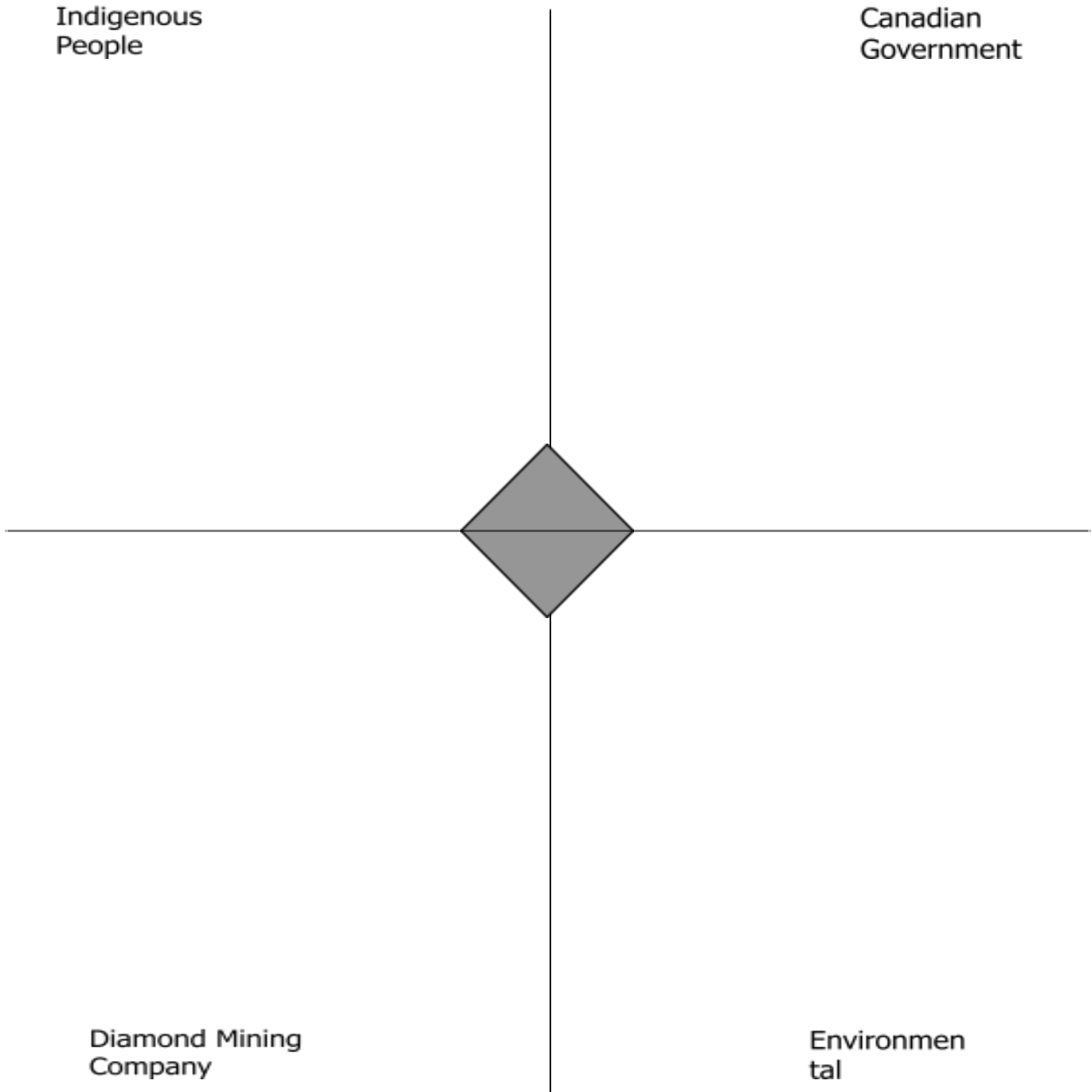
(InfoMine Online Job Fair. *De Beers Canada Mining Inc. Booth*, para 3 and 7)

Diamond Mining Company-Role Card

Role Cards

Examine the impact of diamond mining in Canada. Decide on key points from your information regarding the impact of diamond mining in Canada.

As a group use the graphic organizer below to record key points of information from that presented in the role cards. Then, as a group, decide on the top 5 points of impact of diamond mining in Canada. This information will be presented to the class.





Mining Watch Canada

Ekati has open-pit mined. Each open-pit requires the draining of the lake that sits atop the kimberlite pipe and then some 35-40 million tonnes/year of waste rock is excavated from the pits. Any fish are removed. Other lakes were taken for disposal of processed kimberlite and waste rock.

Ekati is one of the most closely monitored mines in Canada. In its report for 2004, the IEMA (Independent Monitoring Agency) reported that total habitat loss to date was 19.7 km² (twice the size of Yellowknife). It noted an increase in all monitored lakes of total dissolved solids, potassium and ammonia; and an increase in some lakes of nitrates and molybdenum. It has also been found that some of the polymers in the processed kimberlite are chronically toxic to water fleas (a crucial part of the aquatic food chain).

The Bathurst caribou herd is the largest mainland herd in the NWT. The herd migrates through the area of the diamond mines. Dust from mining is a serious threat to caribou, as it can spread out and contaminate the lichen, on which they depend. The herd has declined in numbers from a high of about 400,000 animals in the 1980s to 128,000 in 2006. This reduction is apparently still within the range of natural variability but caribou are much more sensitive to disturbance when a herd is in decline. There is some statistically significant data from limited satellite collaring that female caribou tend to avoid mine sites in the critical post-calving period.

Diavik. With Diavik mining the bottom of the lakebed and discharging its mine water back into the lake, there is increasing concern over water quality changes. Diavik is discharging more ammonia than permitted under its original licence and there are serious concerns about the aquatic baseline and the ability of the current aquatic effects monitoring program to detect changes in water quality. Like Ekati, there are also concerns about dust and contamination of the lichen.

Victor. *Environmental Impacts of the Victor Mine include:*

Water impacts:

- 100,000 m³ of salty water will be pumped out of the pit each day into the Attawapiskat River. This is equivalent to 40 Olympic-sized swimming pools per day or 14,600 per year.
- The flow of the Nayshkatooyaow River will be decreased by at least 15%.
- A 2.6 kilometre stretch of South Granny Creek will be "moved".
- 1.2 million m³ of muskeg, including trees and other plants, will be removed.
- River crossings may lead to siltation of rivers and creeks and impact water quality.
- Fish populations such as lake sturgeon, brook trout, walleye and whitefish may be harmed by the changes in water flow and water quality.
- Methyl mercury may be released by the dewatering of the muskeg

Land impacts:

- 2.5 million tonnes of rock would be processed (piled, crushed and dumped) each year.
- 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 waste rock may leach chemicals, such as acids, into the surrounding water.

Wildlife impacts:

- The area of the proposed mine and its associated infrastructure provides critical habitat for woodland caribou, a threatened species. Woodland caribou are extremely sensitive to industrial activity and usually disappear from areas where it occurs. After the mine closes and the site is revegetated, studies say that "excellent habitat for moose" (shrubs and young forest) will be created, which also means that the habitat that previously supported caribou (older forest and bogs) will be diminished. This may result in the local extinction of caribou.

- The water table would be affected for up to 260,000 hectares surrounding the mine. This would dry out muskeg, change the vegetation of the area and reduce the abundance of lichens, a key food for caribou.
- The noise of the explosives used to construct the mine and from pit operations combined with trucks bringing supplies and materials to and from the mine site (60 trucks per day) would negatively impact wildlife behaviour.
- Easier motorized access (better and more roads) to and in the region will increase hunting pressure on game species.

- Habitat for migratory birds will also be affected.
- (Mining Watch Canada (2007, December 6). *There Are No Clean Diamonds*, para 19 -20, 23, 28, 41 – 43)

The Diavik Diamond Mine

Diavik has taken on a number of initiatives in environment protection and sustainable development.

Caribou

A small portion of the Bathurst caribou herd passes through the Lac de Gras region during spring and fall migrations. To protect caribou migrating near the Diavik Diamond Mine, all haul roads have caribou advisory signs to ensure caribou and other wildlife have the right of way. Annually, Diavik monitors caribou within the region with the assistance of Aboriginal elders from local communities.

Water quality

Rain and snowmelt from the island has naturally entered the lake over centuries. The preservation of water quality in the lakes and drainage systems is important to the Dene and Inuit communities, who expressed their great sensitivity to sustaining the environmental quality of land and water. To protect water quality, Diavik constructed an extensive water collection system to help protect the surrounding lake waters. Through sumps, piping, storage ponds, and reservoirs, Diavik collects run-off water, which is used in processing and can be treated before being released to the environment.

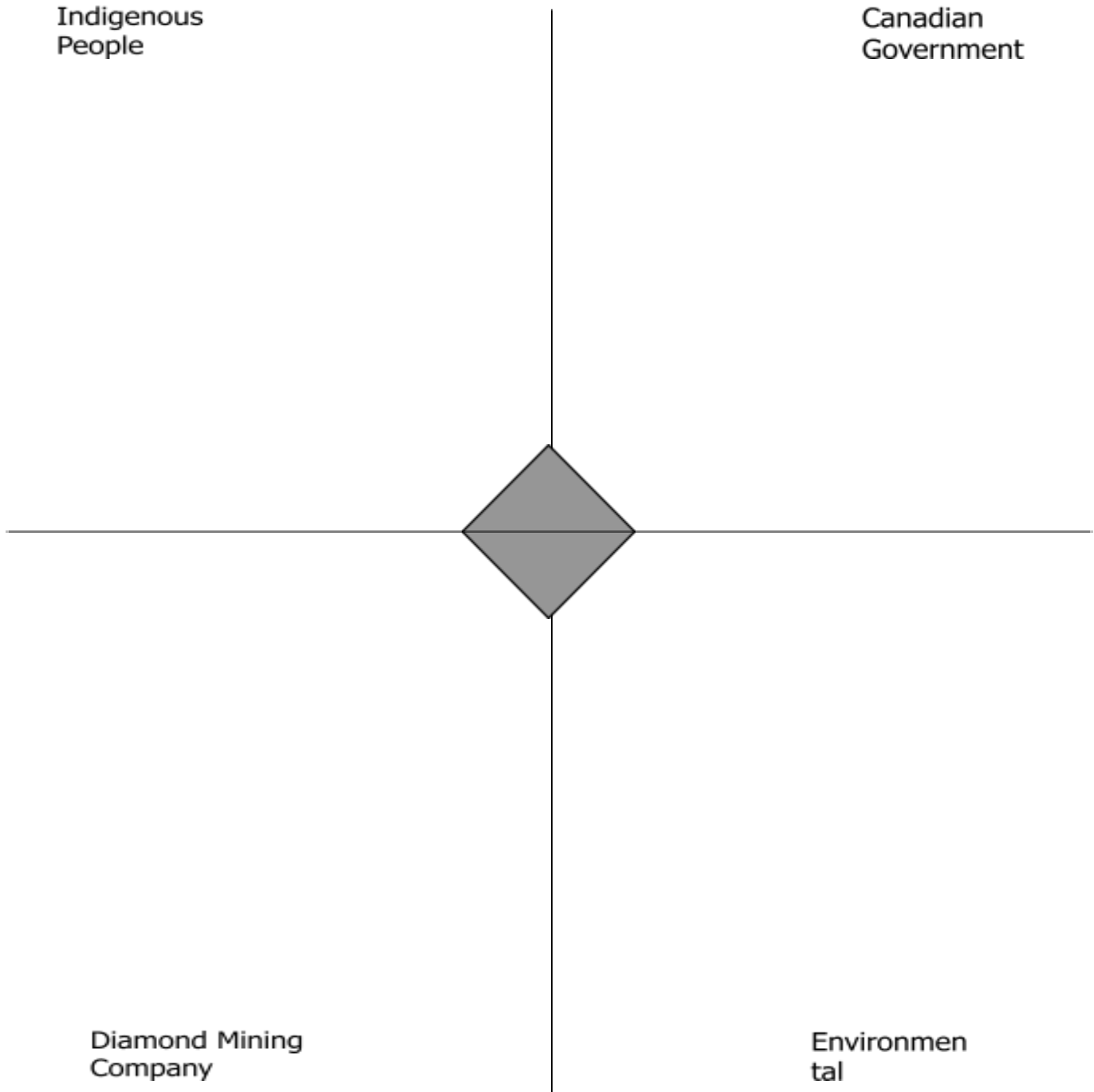
The main repository for water collected in the mine is the North Inlet storage area. Water is collected here and then pumped to the water treatment plant -- a key component of the mine's water management system. After treatment to remove suspended solids, the water is released into Lac de Gras.

To ensure that the pollutants are not released into the lake, Diavik has also put in place the Aquatic Effects Monitoring Program. Under this program, lake water is sampled and analyzed at regular intervals and at set locations over the complete range of depth, both at times of thick ice cover and

Environmental Services- Role Card

Examine the impact of diamond mining in Canada. Decide on key points from your information regarding the impact of diamond mining in Canada.

As a group use the graphic organizer below to record key points of information from that presented in the role cards. Then, as a group, decide on the top 5 points of impact of diamond mining in Canada. This information will be presented to the class.



Statistics Canada web site

"1998 to 2003

"Canada is a major player in the international diamond scene adding lustre to the economy of the Northwest Territories.

"From 1998 to 2002, companies have mined about 13.8 million carats of these precious stones of pure carbon, collectively worth \$2.8 billion. This is roughly equivalent to a 1.5-kilogram bag of ice each day for five years, with each bag worth \$1.5 million.

"By the end of 2003, Canada produced almost 15% of the world's supply of diamonds, making it the third largest producer of diamonds, behind Botswana and Russia.

Diamond rush: Dazzling the Northwest Territories economy

"Economic output in the Northwest Territories surged ahead 5.1% in 2002, fuelled by the EKATI mine running at full capacity and by construction of the Diavik mine, which neared completion. Diamond mining accounted for just over one-fifth of the Northwest Territories' gross domestic product.

"From 1998 to 2001, the number of employees directly involved in diamond mining increased almost seven-fold, from just over 90 to more than 700. More recent figures indicate there are currently about 2,200 jobs related to diamond mining.

"The average salary for all workers employed in the diamond mining industry in the Northwest Territories from 1998 to 2001 was \$61,639. The average for production employees, those involved in the mining operations, was slightly higher, at \$64,336."

(Statistics Canada (2007). Study: Diamonds are Adding Lustre to the Canadian Economy, *The Daily*, para 1 – 7)

Natural Resources Canada web site

Employment

In 2007, the Canadian diamond mining industry employed about 2650 people in mine operations and more than 1500 on-site workers through contractors in support industries such as maintenance, catering, transport, etc. Aboriginal persons generally comprise 30-40% of the work forces at the mines.

Kimberley Process for Rough Diamonds

The [HYPERLINK](http://www.nrcan-rncan.gc.ca/mms-smm/busi-indu/kpd-pkd-eng.htm)

"<http://www.nrcan-rncan.gc.ca/mms-smm/busi-indu/kpd-pkd-eng.htm>" \o "Kimberley Process" Kimberley Process was initiated by South Africa in May 2000 to develop an international certification scheme for rough diamonds to help prevent conflict diamonds from entering legitimate markets. Conflict diamonds originate in areas controlled by rebel groups and are often used to fund military action that targets governments.

Canada was a key player in the development of this initiative and since its inception on January 1, 2003, has been a leader in the implementation of the process to control the conflict diamond trade internationally. Canada passed legislation to control the import, export and transit of rough diamonds in Canada. By participating in the Kimberley Process, Canada is doing its part to halt the devastating impact that trade in conflict diamonds is having on peace, security and sustainable development in affected countries.

(Natural Resources Canada. *Canada: A Diamond Producing Nation*, para 8 – 10)

"[T]oday I would like to discuss the issue about fly-in workers to the diamond mines. This is a growing concern of my constituents. This is a growing concern among northern communities. They are constantly asking, is this government doing enough to this problem? The socio-economic agreements between the diamond mines and the GNWT set out employment targets for northerners and aboriginal residents, Mr. Speaker. These targets for northern resident employment during the mine operations are set at roughly between 60 and 70 percent. It appears increasingly difficult to meet these targets the mine is setting. What are we doing? Are we doing enough?"

"The high cost of living contributes to people not wanting to live in the Northwest Territories, to make their homes here, to contribute to the communities. Incentives for northern residents have steadily decreased over the years, Mr. Speaker. Since the third-quarter, the 2005 population census told us that we have lost approximately 850 residents, Mr. Speaker. I have no doubt some of those are mine employees relocating. Why are they relocating, Mr. Speaker? Because the mining industry is reacting to these changes as all good businesses do. But one such adaptation is they are now providing free flights to their employees from the South to work in their northern sites. Pretty nice, I will say. This is an attractive option for workers who do not live in the North, Mr. Speaker. It would be crazy for them not to take these options up. These are fly-in workers who are taking their earnings from our North, our only opportunity to get any benefit from these mines, and they are taking them south so they are not contributing to our North. Again, they are not contributing to our communities.

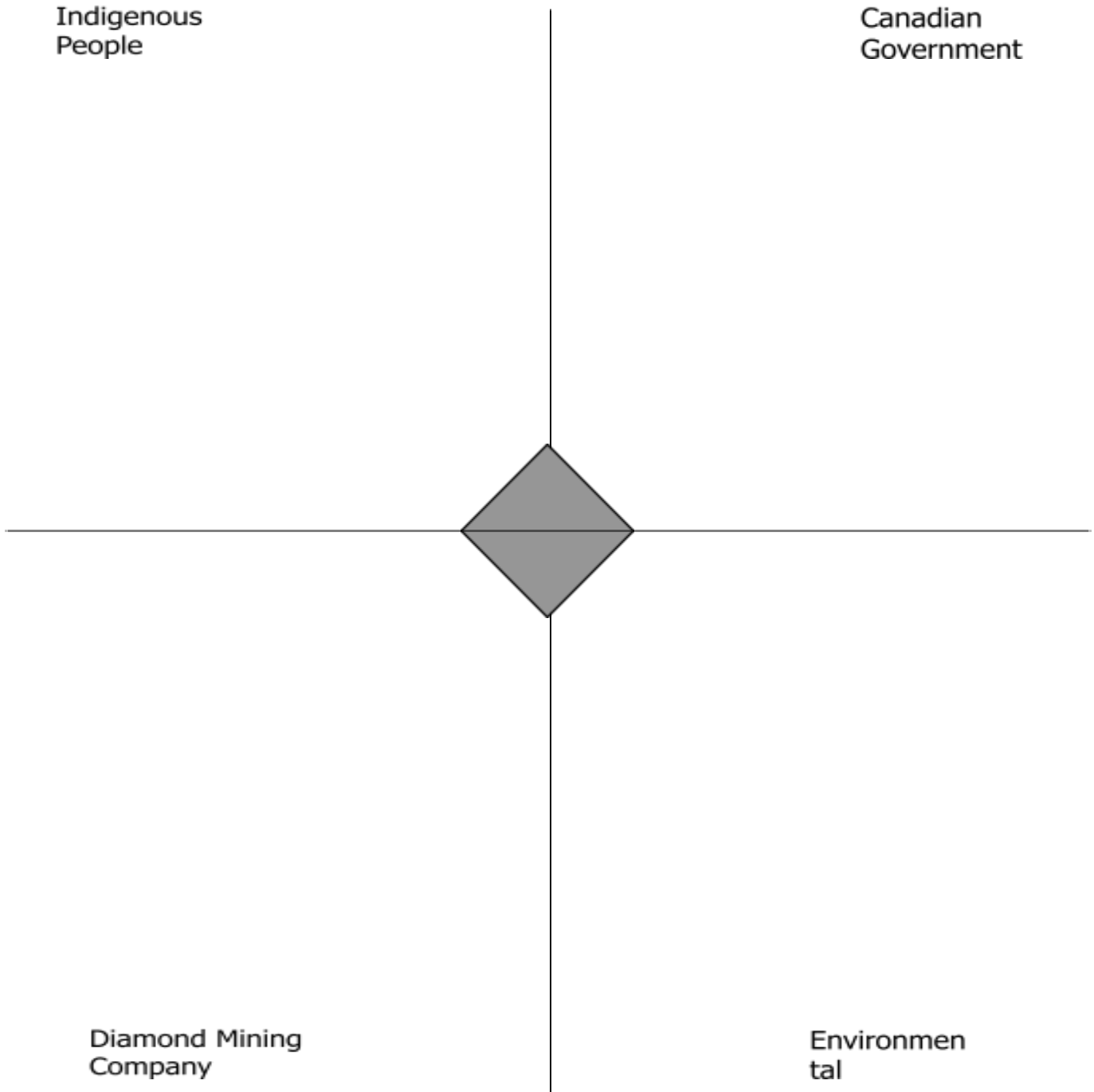
"All socio-economic agreements have monitoring provisions in place. . . The mining companies have agreed to consult with their northern partners to find ways to meet these set targets."

"[I]t is set out in the socio-economic agreements that we have the right

Government- Role Card

Examine the impact of diamond mining in Canada. Decide on key points from your information regarding the impact of diamond mining in Canada.

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**Alvin Fiddler, Deputy Grand Chief
Nishnawbe Aski Nation**

Unfortunately, many Canadian diamonds are anything but conflict-free; ongoing aboriginal rights and environmental concerns should make consumers think twice before purchasing a Canadian diamond, too.

At 1.4 billion acres, the Canadian Boreal Forest is one of the largest unspoiled forest ecosystems remaining on Earth, a mosaic of interconnected forest and wetland ecosystems, teeming with birds, fish, plants, and animal life. Canada's Boreal Forest is also a potential treasure chest of timber, oil and gas, and minerals, including diamonds and is under heavy development pressure.

At present, less than 10 percent of the Boreal is protected from industrial development.

Unless something changes, corporations will carve it up without regard to the impacts to the people or the environment. The Nishnawbe Aski Nation or the Boreal Forest, is critical to the earth in so many ways, and must be protected.

The Nishnawbe Aski Nation, along with many other First Nation communities throughout the great Boreal Forest have been in the grip of a diamond exploration boom led by companies like De Beers. That and other intensive resource development is causing environmental devastation. A complicit Canadian government seems to be turning a blind eye.

We need and welcome responsible resource development, but with an emphasis on the word responsible.

The Nishnawbe Aski Nation communities are among the poorest in the world, ranked 69th in the U.N.'s Human Development Index, with the lowest life expectancy in Canada, the highest youth suicide rates in the world, and an unemployment rate of more than 60 percent. With diamonds on our lands our communities should be wealthy.

Instead the hunt for these rare gems from the heart of the Earth has meant only conflict and strife for us. De Beers plans to develop massive open pit diamond mining projects in our traditional territory but it is not honoring our treaty rights or working with us to win our consent for the projects.

Their army of airplanes, helicopters and claim stakers has been trespassing on the traditional lands of many of our communities, despite our calls for moratoriums on diamond exploration. The link between diamond exploration and aboriginal and treaty rights violations fits the pattern of diamond conflicts in Africa.

In those former European colonies, the scramble for control of diamond mining territory has helped to fuel a cycle of conflict. Will the cycle be repeated in our lands too?

Before they can claim to have done the right thing in Canada, De Beers and other Canadian diamond mining companies must demonstrate a different attitude and pattern of behavior.

They must allow us to determine where, when and how diamond mining will take place, if at all. They must also work with us and the Canadian governments to protect the great Boreal Forest ecosystem and make sure it continues to provide clean air, clean water and abundant wildlife for our communities and for the world.

The battle over diamonds will be largely fought in the United States, where annual sales of diamond jewelry represent almost half of the \$55 billion sold world wide. The time is now for consumers in the United States to connect the dots and weigh in.

Tell De Beers, other diamond miners and Canada that unless things change, Canadian diamonds

From Canadian diamond industry quarterly magazine

Canada's diamond mines and the infrastructure that supports them sit in caribou country. Dene village of Lutselk'e, NWT, a 28-year-old mother-of-three took the microphone and addressed the assembled crowd with a trembling voice: "If I could give my opinion to the world, go on City TV and say 'I'm Gloria Enzoe. I'm from Lutselk'e. You may not know me, I may not be popular, but I'm here', then I'd tell them that if we don't protect our animals, our birds, our water, our land, then it's all going to be spoiled. We're not going to have anywhere to go. We'll have mining on all sides and be stuck in the middle, with nowhere to go and with pollution coming towards us."

We don't want any more mining on our land. Not now. Not while there is already so much mining going on, not while the environment suffers and we don't benefit, not while nobody can say why caribou populations are dropping.

Diamonds have been mined from the NWT land for almost a decade now. They have brought wealth and opportunity for many and are a key driver of the Northern economy. But there has always been opposition, too, particularly from aboriginal residents: concerns about environmental degradation, the loss of culture and a way of life. Clearly, with three diamond mines in operation in the North and two more in development, the supporters have been getting their way.

(Ganley, Michael (2007). *Where Have the Caribou Gone? Up Here Publishing*. Para 1 – 3)

Mining Watch Canada

When the community of Muskrat Dam in northern Ontario arrived at Agusk Lake for their spring goose hunt in late April 2006, they discovered that exploration activities undertaken by De Beers Canada Inc. had driven away the geese. The elders of the community depend on the traditional community goose hunt for food.

Muskrat Dam has a moratorium on development in their traditional territory. In a letter to the Ministry of Mines (OMNDM), Chief Vernon Morris writes: "The lands in question are traditional lands essential to the maintenance of the distinctive culture of the Muskrat Dam First Nation, and the exploration program have seriously disrupted the Muskrat Dam First Nation's spring goose hunt. There will be few geese for the community of Muskrat Dam this year."

A press release addressing the situation by De Beers on May 10, claimed that the company had approached Muskrat Dam First Nation in March 2006 to request a meeting "to enquire about the community's traditional land and pursuits as well as to discuss the early exploration work planned in the region for spring of 2006. This request was declined."

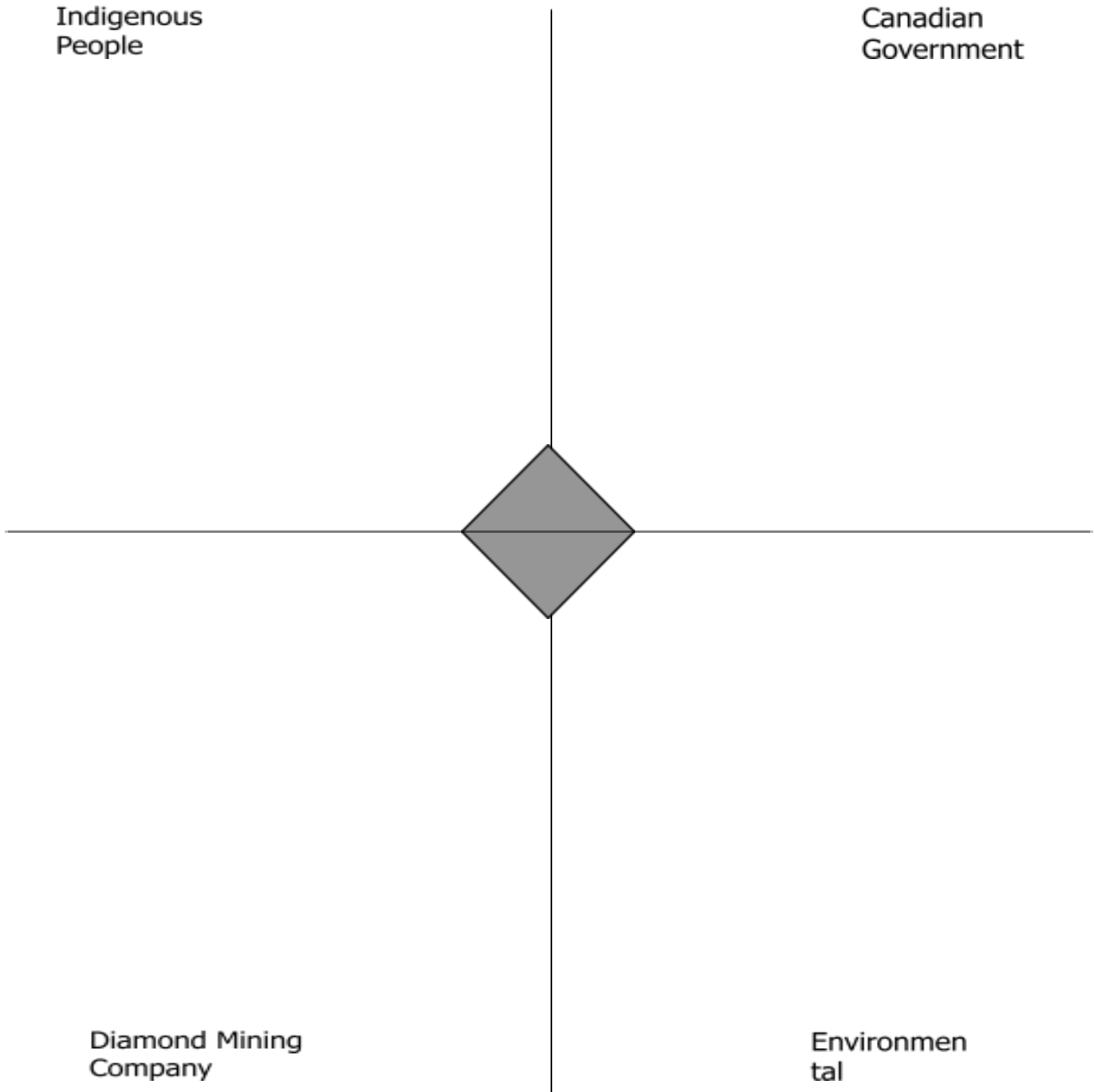
Chief Morris categorically denies that De Beers made any contact with Muskrat Dam regarding this exploration plan. In a letter to De Beers Canada on May 15, he wrote: "That statement is incorrect. I am Chief of this community and I have no knowledge of such a meeting request."

(Mining Watch Canada (2006, May 21). *De Beers Accused of Ruining Spring Goose Hunt – Muskrat Dam*, para 1 – 4)

Indigenous Peoples - Role Card

Examine the impact of diamond mining in Canada. Decide on key points from your information regarding the impact of diamond mining in Canada.

As a group use the graphic organizer below to record key points of information from that presented in the role cards. Then, as a group, decide on the top 5 points of impact of diamond mining in Canada. This information will be presented to the class.



Notes on Round Table Discussion

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Discussion Member (Role): _____

<i>Background on discussion member</i>
Interests/concerns addressed
Proposals/plans
<i>Key reasons/evidence presented</i>

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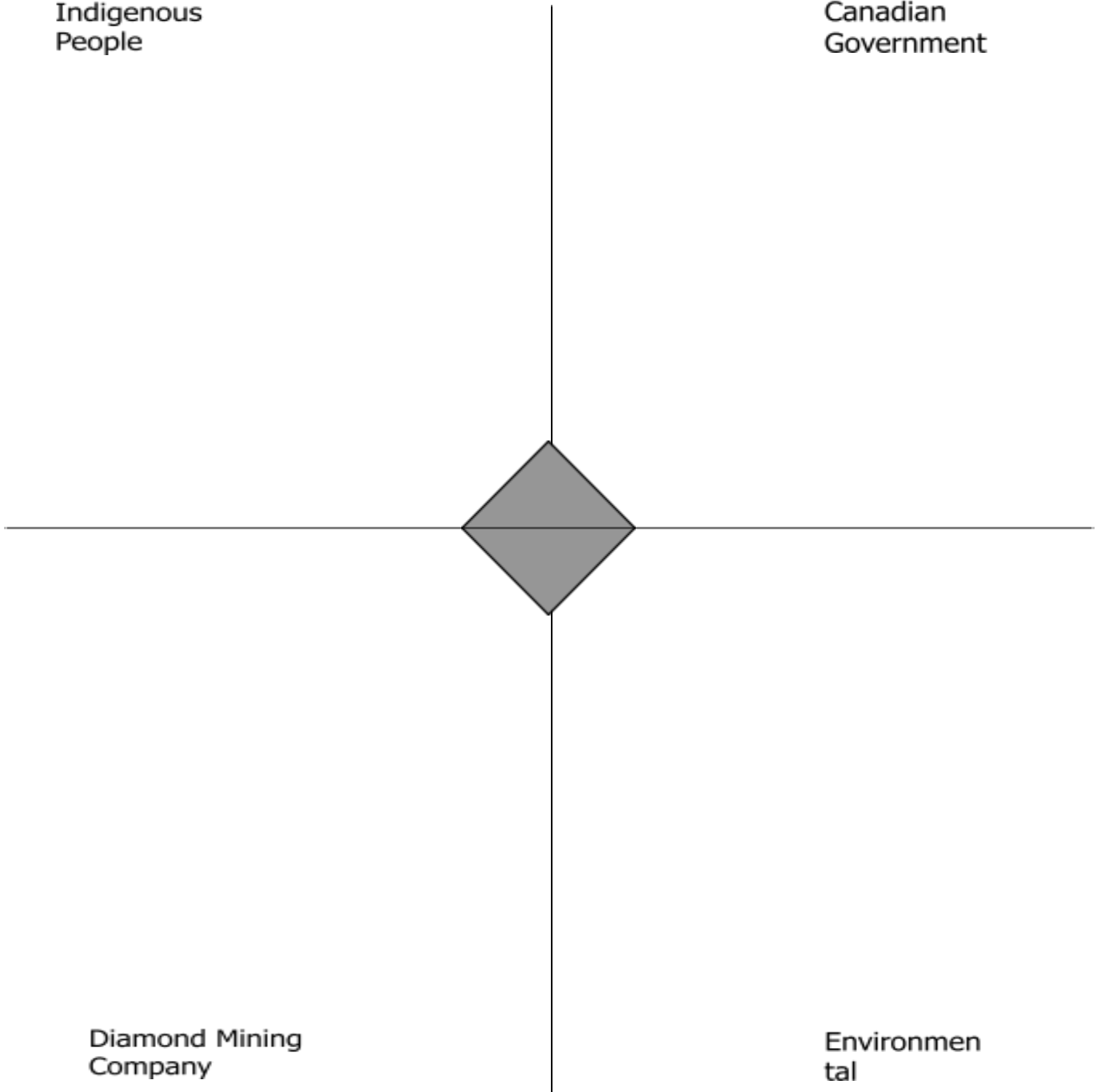
Digging Deeper

Record additional information for your final project.

Sites visited (For bibliography):

Indigenous
People

Canadian
Government





Your best friends are deeply in love, and after a long-term commitment to each other, they have decided to get married. Because of the recent news stories surrounding the diamond industry, they are considering whether or not to celebrate their love with the tradition of a diamond engagement ring. They have heard of Canadian "Polar Bear" diamonds. Is this the right choice? Help them decide!!

Realizing that your friends are not alone in their questions, create a presentation to help young people to decide on the best choice for a diamond purchase. Include the following:

- A photograph which provides a visual representation of an aspect of the research you have done on this issue. Include a caption which is **catchy, intriguing, and concise**,
- A graph or other visual support of your research, with an explanation of the key information
- A clearly stated position of whether or not the Canadian "Polar Bear" diamond is the right choice, including evidence in the following categories:
 - Environmental concerns
 - Indigenous people's concerns
 - Diamond mine company concerns
 - Government concerns
 - Diamond mining regulations (Kimberley protocol, Canadian Diamond Code of Conduct)
 - A comparison of Canadian Diamond mining with diamond mining in Africa (ie Kimberly, Sierra Leone, Congo). Compare at least two different aspects.
- A Google Earth image which connects to your position, with a caption to explain the image.

Your presentation can take many formats: a brochure, video, powerpoint, diorama/text combination, poster....

Checklist for Final Task

Photo and caption	1	2	3	4	5	Comments:
Graph or visual, with explanation						
Evidence: environmental						
Evidence: indigenous						
Evidence: government						
Evidence Diamond mine company						
Comparison: Africa Canada						
Google Earth Image						

1. Missing or very difficult to see evidence of this
2. Some attempt to have this aspect present, provides limited support of position, limited evidence of research
3. Aspect is present, provides generalized support of position, evidence of some research
4. This aspect is present, provides good support of position, shows evidence of research from a variety of sources
5. This aspect is present, provides excellent and insightful support of position, shows evidence of thorough research from varied sources