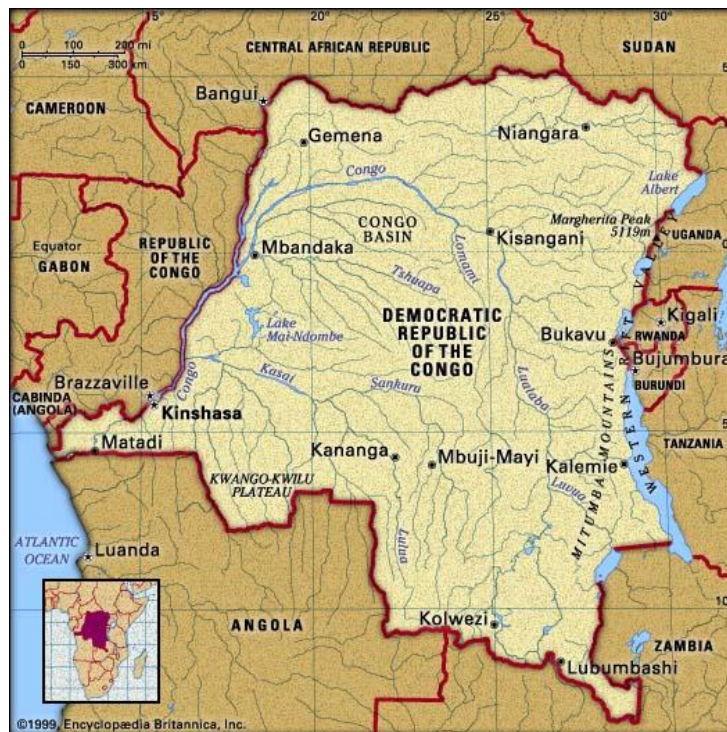


Where Do You Get Your Coltan?

Social Action Project: Information and Resource Booklet



Presented by: Alexandra Bellissimo, Suzanne Bender, Deanna Coghlin,
Kelly Dao, Odette Pretty and Amy Trick

Dear colleagues,

The choices that we make here in Canada have global impacts. As active, engaged citizens, we may wish to make informed decisions, but cannot do this without information. As teachers, we may wish to encourage our students to think critically about global issues, but we cannot do this without information. As students we may wish to be agents of positive change; but we cannot do this without information.

Incorporating a global perspective into an elementary classroom presents many challenges such as ensuring the material is age-appropriate and the nature of the issues themselves. Our goal is to provide an educational package that shows how a global issue can be incorporated into an elementary curriculum while informing and empowering students. Coltan is the perfect vehicle through which one can introduce issues related to social justice, conflict, inequity, environmental sustainability, human and animal rights. The existence and impact of Coltan is relatively unknown to the average person.

In some regions where Coltan is mined it has been directly linked to conflict for example, in the Democratic Republic of the Congo, the profits from selling Coltan are often used to fund armed conflicts in immediate and neighboring regions (United Nations, 2009). According to the Environmental Protection Agency (EPA) and other credible international monitoring organizations, millions of cellular phones go out of use each year. This creates an estimated 65,000 tons of electronic garbage in the United States alone (Cardona, 2002). The majority of these phones are simply stored in people's homes or thrown away, while a very small percentage (about 5%) will be recycled (Clean Calgary Association, 2007). By not recycling cell phones we are encouraging the need for more Coltan extraction and thus perpetuating the negative cycle that accompanies the use and mining of this mineral. Recycling used cell phones and batteries will decrease the use and need of Coltan.

The following is an educational package to address these obstacles and includes tools to incorporate this information into your future lessons and classrooms. The package includes information about how to use the information in your classroom, resource lists for teachers and students, a fact sheet about Coltan, information about the issues surrounding Coltan such as child labour and an educational video about the extraction of this ore. The educational package also includes 6 detailed, cross-curricular lesson plans ranging from Grade 1 to Grade 6. These lesson plans and activities can be adapted for both the Intermediate and Senior divisions. All information in the educational package will be available on the Developing a Global Perspective for Educators website: <http://www.developingaglobalperspective.ca>

We hope that you enjoy the resources in this package and are able to put them to use in your practicum and future classroom.

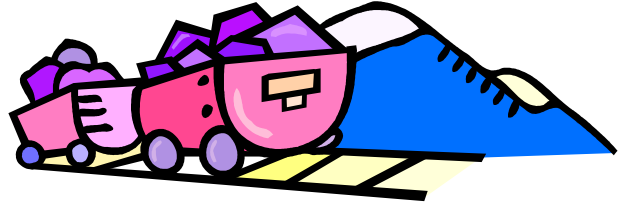
Sincerely,

Alexandra, Amy, Deanna, Kelly, Odette and Suzanne

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Coltan Fact Sheet



- Coltan is short for columbite-tantalite - a black tar-like mineral found in major quantities in the Democratic Republic of Congo (DRC).
- The DRC possesses 80 percent of the world's coltan.
- Rwanda, Uganda, Burundi and their proxy militias are the primary exploiters of coltan in the DRC. In an 18-month period Rwanda made \$250 million as a result of exploitation of coltan in the DRC.
- Human Rights Watch researchers, working with monitors in the DRC, estimate that at least 10,000 civilians have been killed and 200,000 people have been displaced in the Northeastern DRC since June 1999. Rebels have driven farmers off their coltan-rich land and attacked villages in a civil war raging, in part, over control of strategic mining areas.
- The United States is the largest consumer of tantalum in the world, accounting for 40 percent of global demand.
- According to the United Nations, more than 20 international mineral trading companies import minerals from the DRC via Rwanda alone.
- The market for coltan is huge. Last year, approximately 6.6 million pounds of tantalum were used around the world. Sixty percent of this was used in the electronics industry, where it can be found in products like mobile phones, computers, game consoles and camcorders.

What are some of the uses of coltan in modern society?

- Laptop computers
- Cellular phones
- Jet engines
- Rockets
- Cutting tools
- Camera lenses
- X-ray film
- Ink jet printers
- Hearing aids
- Pacemakers
- Airbag protection systems
- Ignition and motor control modules, GPS, ABS systems in automobiles
- Game consoles such as playstation, Xbox and Nintendo
- Video cameras
- Digital still cameras

Map of DRC



Congo, Democratic Republic of the: geography. [Map/Still]. Retrieved February 16, 2009, from Britannica Student Encyclopaedia: <http://student.britannica.com/elementary/art-64957>

How this Impacts You in Your Classroom

Recycling and Earth Care programs are becoming a fixture in many Canadian schools encouraging students to care of the planet. One important aspect of recycling information that is commonly neglected is the recycling of electronic equipment. Electronics, especially cell phones, are more likely to end up in the waste stream and leaching toxic chemicals to accumulate in our landfills (ECO-CELL, 2008). Taking action involves exercising preventative measures in our everyday life and educating our children so that they can make informed decisions. As teachers we have a significant influence on our students and it is important that we introduce them to a framework with which to approach global issues. This booklet introduces students to some environmental concerns but it also lays the foundation to start explore some of the related social concerns connected to the mineral coltan. Through examining the issue of Coltan - on a variety of levels - we hope to encourage students to make critical connection between their actions and global repercussions.

It is our hope, that through introducing students to one world issue that it inspires them to take action in the school community, local community or even international community, whether it be through a class social action product, running an environment club or being more cautious of our own behaviours in the classroom (e.g., recycling paper).

Coltan and Conflict

“Coltan is the name for columbo-tantalite mined in Africa.” (Munn, Morse & Ihn, n.d., para. 1). “When refined, the ore becomes tantalum...” (Burge & Hayes, 2002, as cited in Munn, Morse & Ihn, n.d., para. 1). The Democratic Republic of the Congo is, “...tied with Canada in having the world’s fourth-largest Coltan reserve, according to research firm Roskill Information Services” (Essick, 2001, para. 13). There are many causes of the conflicts in Central Africa which we are not going to focus on herein. However, it is important understand that much of the money which is made from the trading of coltan to global markets is then used to finance these conflicts (Essick, 2001). In a one year period, a minimum of 10,000 civilians are killed and 200,000 people are displaced as a result of the conflict over coltan (Essick, 2001). Armed conflict has long plagued the DRC, since its beginning it is estimated that over 3.9 million people have been killed, 1.5 million have been internally displaced and 400,000 thousand people have fled as refugees (International Affairs Review, 2008).

Coltan and Inequity

The conflict currently fuelled by coltan causes much inequality among the people of the DRC. Coltan is only benefiting a few people in the DRC while the majority of people suffer. This is made clear by the *International Affairs Review* (2008): “armed rebel groups, political and military elites, and multinational corporations have reaped billions of dollars in profits from natural resource exploitation, small arms trafficking, and taxation” (para. 2). For example, the Rwanda military has benefited greatly from the sale of Coltan, having made 250 million US Dollars in less than eighteen

months (Cellular News, n.d.). Inequity is also evidenced by military rebels forcing farmers away from their coltan-rich land and attacking villages to gain control of the mining areas (Essick, 2001). People who mine Coltan have their rights violated often; for example, miners are often robbed by members of the military after they have sold what they have extracted (Vesperini, 2001). In addition, many innocent civilians have been killed, deported, tortured, and raped due to the conflict (Essick, 2001). It is time that awareness of this issue is raised in order to stop the inequality and inequity taking place in the DRC.

Coltan and Environmental Sustainability

The environmental effects of Coltan extraction, consumption and disposal are devastating.

Coltan has harmful effects on the environment and people due to the way it is mined. Many people in the DRC have left their farming jobs to work in coltan mines; however, this livelihood is not sustainable as the coltan supplies could run out. When supplies run out, these people will no longer have their former farming livelihood. Also, the economic impact when coltan runs out will devastate a large proportion of the people in the DRC as approximately eighty percent of all business centres around the coltan trade (Vesperini, 2001).

Deforestation is also taking place in national parks including *Kahuzi Biega National Park* where the forests are being cleared in order to set up mining camps. People living in these camps are forcing the gorilla populations to leave and are also relying on the forests to feed them; all of which affect animal populations (Essick, 2001; Munn, Morse & Ihn, n.d.). If Coltan continues to be mined in the way that it is, the human and environmental impacts will be devastating.

International demand for products containing coltan remains high. Once out of date, these products are frequently deposited in landfills rather than being properly recycled. Cell phones, for example, contain substances called pbts (Persistent, Bioaccumulative and Toxic Chemicals) which both harm and linger in the environment, building up over time and adversely affect human health (ECO-CELL, 2008). It is very important that we work together to ensure that our electronics do not end up landfills!

Coltan and Human Rights

The primary way of extracting the coltan ore is through mines. This raises the issue of human and child rights because the mines are exploited by children of all ages, working in precarious conditions. Often children are the primary or solitary wage earners in their family and many are left as head of their household. The children work, "from sunrise to sunset, they toil in open pits with the most primitive tools and no protection from falling rocks and mudslides. They crawl through dark tunnels with no structural support." (World Rainforest Movement, 2007).

The ultimate question is who should take a stand against child labour in the Congo? Everyone. It is the responsibility of the global community: governments, NGO's, corporations and consumers to ensure that they do not support trade with countries who do not adhere to core labour standards (Turner, 2008).

Due to the current level of demand for coltan for electronics, the biodiversity and existence of many animal species in the DRC is threatened. The mining of this ore has devastated forests such as the Ituri forest and has forever changed the habitat of animal species such as the Eastern Lowland Gorillas, elephants, monkeys and many more. Gorilla populations have been hit the hardest and their sustainability is endangered especially since in five years (ECO-CELL, 2008). The UN Environment Program has reported that the number of Eastern Lowland Gorillas in eight DRC national parks has declined by 90% over the past five years, and only 3,000 now remain (Animals and Environment, 2008). While the destruction of wildlife habitat has led to the decrease in the number of animal species, animals are also being killed as a food source for miners and rebel armies.

To help save these animals and their habitat, the overall demand for coltan needs to be reduced. Countries which import this ore need to engage in ethical decision-making regarding which countries they are importing from. The electronics need to be recycled so the coltan mineral can be reused for new electronics, thus decreasing the amount of coltan that is mined.

Coltan: Grade 1 Lesson Plan

Title: <u>Gorillas and their Habitats</u>		Subject: <u>Science and Drama</u>		Time: <u>50 Minutes</u>	
Topic: <u>Coltan/Social Action/Biodiversity</u>		Grade: <u>Grade 1</u>		Created by: <u>Alexandra Bellissimo</u>	
Lesson Description					
This lesson can be used as a part of the science unit “Needs and Characteristics of Living Things” (Science: Understanding Life Systems), focusing on the needs of gorillas as living things. It focuses on the needs and habitats of gorillas, with broader implications on the mining of coltan in the Democratic Republic of Congo (DRC) and environmental destruction. The lesson also incorporates elements of drama and dance.					
Stage 1: Desired Results					
Fundamental Concepts					
<ul style="list-style-type: none"> Sustainability and Stewardship 					
• Big Ideas			• Social Justice Theme		
<ul style="list-style-type: none"> Living things have basic needs (air, water, food, and shelter) that are met from the environment. All kinds of living things behave in different ways. All living things are important and should be treated with care and respect. 			<ul style="list-style-type: none"> Consideration and respect for the environment and other living things. 		
Ontario Curricular Overall Expectation					
Science and Technology- Grade 1, Understanding Life Systems, Needs and Characteristics of Living Things					
<ul style="list-style-type: none"> Assess the role of humans in maintaining a healthy environment. Investigate needs and characteristics of plants and animals, including humans. Demonstrate an understanding of the basic needs and characteristics of plants and animals, including humans. 					
Drama and Dance – Grade 1					
<ul style="list-style-type: none"> Solve problems in everyday situations through role-playing and movement in drama and dance. 					
Ontario Curricular Specific Expectation					
Science and Technology					
<ul style="list-style-type: none"> Investigate and compare the basic needs of humans and other living things, including the need for air, water, food, warmth, and space, using a variety of methods and resources (2.2) Use appropriate science and technology vocabulary (2.6) Use a variety of forms to communicate with different audiences and for a variety of purposes (2.7) Describe the characteristics of a healthy environment, including clean air and water and nutritious food, and explain why it is important for all living things to have a healthy environment (3.4) 					
Drama and Dance					
<ul style="list-style-type: none"> Identify ways in which the voice and body can be used to convey thoughts and feelings when role playing Demonstrate their knowledge of the movements of natural objects and materials, using their voice and/or body Use the vocabulary and body movements of a particular character when role playing Demonstrate control of their bodies when moving like different objects and animals 					
Lesson Goals					
<ul style="list-style-type: none"> Gain an understanding about why it is important for humans to protect animal habitats. Employ drama and dance techniques as a form of expression. 					

Key concepts and/or skills to be learned/applied:	Background Knowledge:
<ul style="list-style-type: none"> • People have an impact on their environment. • Students will learn to express themselves using drama. 	<ul style="list-style-type: none"> • Students will have completed prior lessons on the needs of plants and animals.
Stage 2: Planning learning experience and instruction	
Student Groupings	Instructional Strategies
<ul style="list-style-type: none"> • Whole class discussion • Whole class demonstration 	<ul style="list-style-type: none"> • Questions and answers • Direct instruction • Interactive Instruction
Materials	Considerations
<ul style="list-style-type: none"> • Chart paper, markers • Video on mountain gorillas http://www.youtube.com/watch?v=W4ekxO1GDDs&feature=related • Newspaper • Checklist for assessment (in “Assessment” category) 	<ul style="list-style-type: none"> • Because there are hunters in this simulation, a discussion may be necessary about appropriateness in the classroom (i.e. no guns). Focus on the movement of hunters and how it scares animals, moving them from their habitat.
Differentiation	
<ul style="list-style-type: none"> • For visual learners, the chart paper and video will be useful. Auditory learners may find the discussion helpful. And acting as the different characters will be effective for kinaesthetic learners. 	
Stage 3: Learning experience and instruction	
Open (15 minutes)	
<ul style="list-style-type: none"> • In a group discussion using chart paper to write answers, ask students to name basic needs of living things, including plants and animals. • Ask questions to prompt certain answers like “What do you need in your daily life to be healthy?” • With the students create another list listing any ideas they have of things that can impede the items on the first list. As this is a way to see what students know, no prompting is necessary. 	
Body (30 minutes)	
<ul style="list-style-type: none"> • Show students the video about mountain gorillas, asking the students to note how gorillas act. • Have all the students act like mountain gorillas in various parts of their daily lives: playing, looking for food, eating, grooming, sleeping. • Assign students various roles: gorillas, hunters, miners, city people. And as a class discuss how these characters can be acted out. E.g. Hunters creep around with binoculars, miners use pick-axes and push carts, city people walk around and throw garbage. Let the students dictate how these characters act. • Lay newspapers on the carpet and have three volunteers act as gorillas, standing on the paper. The gorillas have free reign to wander over the area covered with newspaper (while acting like gorillas). • One by one have the infringing characters (hunters, miners, city people) enter the picture, acting in their roles and taking away some of the newspaper, restricting the movement of the gorillas. When there is not enough room for all the gorillas, have some of the gorillas leave the newspaper area and sit down with their other classmates. 	
Close (15 minutes)	
<ul style="list-style-type: none"> • Discuss with students how the mountain gorillas are endangered because of these threats. • Brainstorm what people can do to help mountain gorillas. Mention nature reserves, safe mining practices, taking care of the environment. 	
Link to Future Lessons	
This lesson could be used as a link into further science lessons on the needs and characteristics of living things.	
Assessment	
Assessment for this lesson will be done using a checklist, which follows.	
<u>Checklist for Assessment</u>	

Students will be marked out of 4 for this lesson, using the following checklist (one mark will be given for each checkmark):

- Student participates in class discussion.
- Student participates in simulation.
- Student expresses an understanding of how we impact habitat.
- Student demonstrates understanding the purpose of simulation (in discussion).

Things to consider when observing student participation and understanding:

- Is the student asking questions, answering questions, and paying attention?
- Does the student show an understanding of how gorillas and other players act and what these characters mean to the situation?
- Can the student identify the threats to mountain gorillas?
- Does the student demonstrate an understanding of what happens when the gorilla's habitat is limited?

Coltan: Grade 2 Lesson Plan

Title: <u>Ethics and Animals</u>		Subject/Course: <u>Science & Language Art</u>		Time: <u>50 Minutes</u>	
Topic: <u>Animals and Coltan</u>		Grades: <u>Grade 2</u>		Created by: <u>DC</u>	
Lesson Description					
This lesson serves as an introduction about how our actions within our local community can have a global impact on animal habitats. It will introduce how the extraction of coltan affects the habitat of wildlife in the Democratic Republic of Congo (DRC).					
Stage 1: Desired Results					
Fundamental Concepts					
<ul style="list-style-type: none"> • Structure and Function • Sustainability and Stewardship 					
Big Ideas					
<ul style="list-style-type: none"> • Humans need to protect animals and the places where they live. • Humans are animals 					
Ontario Curricular Overall Expectation- Science and Technology- Grade 2, Understanding Life Systems, Growth and Changes in Animals					
<ul style="list-style-type: none"> • Assess ways in which animals have an impact on society and the environment, and ways in which humans have an impact upon animals and places where they live. 					
Ontario Curricular Specific Expectation					
<ul style="list-style-type: none"> • Identify the positive and negative impacts that animals have on humans (society) and the environment (1.1) • Identify positive and negative impacts that different kinds of human activity have on animals and where they live (1.2) • Investigate the life cycle of a variety of animals (2.3) • Identify ways in which animals are helpful to and ways in which they meet the needs of living things, including humans, to explain why humans should protect animals and the places where they live (3.3) 					
Lesson Goals					
<ul style="list-style-type: none"> • Gain an understanding about why it is important for humans to protect animal habitats in our local community and global community (eg. DRC). Students will research one animal from the DRC and create a poster exemplifying why their habitat needs to be protected. 					
Key concepts and/or skills to be learned/applied:			Background Knowledge:		
<ul style="list-style-type: none"> • See Ontario Curriculum concepts, ideas, expectations 			<ul style="list-style-type: none"> • Students will have completed prior lessons on how to care for animals and the different animals found in their local community. 		
Stage 2: Planning learning experience and instruction					
Student Groupings			Instructional Strategies		
<ul style="list-style-type: none"> • Whole class discussion • Individual work 			<ul style="list-style-type: none"> • Summarizing • Direct instruction • Cues & questions 		
Materials			Considerations		
<ul style="list-style-type: none"> • Visual aid of the DRC • Example of awareness poster • Video on wildlife habitat protection 			<ul style="list-style-type: none"> • Due to the negative nature of the global issue, present any progress that has been made on the issue. 		
Accommodations					
<ul style="list-style-type: none"> • Visual aids, maps and videos will be used for visual learners. The content will be discussed with the class for auditory learners. 					
Stage 3: Learning experience and instruction					
Motivational Hook					
<ul style="list-style-type: none"> • Get students to connect the global issue to their everyday lives- ask who has a pet, where they live, what things their animals need to survive. 					

Open

- Introduce how animals around the world are just like our pets at home- they need to have a safe place to live. Watch the video on wildlife in the DRC- http://www.youtube.com/watch?V=r3_oiyxnyme

Body

- Class discussion on the video: what animals did you see in the video? Do they have a safe place to live, why or why not? What can humans do to protect their habitat?

Close

- Introduce project for future lessons- picking an animal in the DRC (provide students with a list to choose from), researching 5 points about their habitat and creating a poster about the importance of protecting their habitat.

Link to Future Lessons

Future lessons can look at other animal habitats around the world and will also require additional time for students to research and create their awareness posters.

Assessment

The awareness poster that students will create will be a formative assessment. Teachers can assess using a checklist that looks for: completion, the balance of information vs. Visuals on the poster, and how well the student communicates the need for their animals' habitat to be protected.

Coltan: Grade 3 Lesson Plan

Title: <u>Electronics: Wants or Needs?</u> Subject/Course: <u>Social Studies/Language Arts</u> Time: <u>155 Minutes (2.5 periods)</u>	
Topic: <u>Coltan/Social Action</u> Grades: <u>Grade 3</u> Created by: <u>A.T.</u>	
Lesson Description	
<p>This is an integrated lesson comprised of expectations from both the language arts and social studies curriculum. It is designed to introduce students to the environmental issues involved when we purchase electronics, including cell phones. The class will brainstorm the difference between wants and needs, and how electronics (a want) negatively impacts our environment (e.g. by not being recycled properly, toxic chemicals waste etc.). Students will examine landfills in order to understand the importance of recycling. Students will design a persuasive media text (e.g., a comic strip, poster advertisement, a collage/scrapbook or graffiti) to display in the school, which will encourage people to think about how their wants and needs may impact the environment. Links to future lessons include making a skit in order to raise awareness and solve the electronic recycling problem! Students will be encouraged to take this lesson further and turn it into their own social action project.</p>	
Stage 1: Desired Results	
Fundamental Concepts/Skills	
<ul style="list-style-type: none"> • Human and environment interaction (negative impacts) • Toxic chemicals in electronics • Landfills as a part of the community • Media advertising to persuade people • Wants/Needs 	
Big Ideas	
<ul style="list-style-type: none"> • How communities can impact the environment in order to meet human wants/needs. • Distinguishing between our wants and needs, while thinking about the negative environmental impacts our wants could have. • Understand how media text can be used to communicate a message to an audience. 	
Ontario Curricular Overall Expectation	
<p>LANGUAGE ARTS:</p> <ul style="list-style-type: none"> • Create a variety of media texts for different purposes and audiences, using appropriate forms, conventions, and techniques. <p>SOCIAL STUDIES:</p> <ul style="list-style-type: none"> • Explain how communities interact with each other and the environment to meet human needs. 	
Ontario Curricular Specific Expectation	
<p>LANGUAGE ARTS:</p> <ul style="list-style-type: none"> • Produce media texts for specific purposes and audiences, using a few simple media forms and appropriate conventions and techniques (3.4) <p>SOCIAL STUDIES:</p> <ul style="list-style-type: none"> • Sort and classify information about communities to identify issues and solve problems. • Compare land use (e.g. Housing, recreation, stores, and industry) and access to natural resources (e.g., water, trees) in urban and rural communities. 	
Lesson Goals	
<ul style="list-style-type: none"> • By the end of the lesson students will be able to distinguish between a want and a need (e.g. Water = need and a cell phone = a want). • Based on their knowledge obtained in the lesson the students will create a persuasive media text and, in a future drama lesson a skit, to raise awareness and encourage the rest of the school community to recycle and think about how their actions can affect the environment. • To motivate students to think about how they can create their own social action projects. 	
Key concepts and/or skills to be learned/applied:	Background Knowledge:
<ul style="list-style-type: none"> • See Ontario Curriculum concepts, ideas, expectations 	<ul style="list-style-type: none"> • 4 Rs – Reduce, Reuse, Recycle and Rethink • What and who makes up a community

	<ul style="list-style-type: none"> • Drama: creating skits
Stage 2: Planning learning experience and instruction	
Student Groupings	Instructional Strategies
<ul style="list-style-type: none"> • Whole class discussion/brainstorming • Pairs • Small groups in future lessons to create the skit 	<ul style="list-style-type: none"> • Direct instruction • Cooperative learning
Materials	Considerations
<ul style="list-style-type: none"> • Magazines • Newspapers • Glue • Pencil crayons • Markers • White paper of different sizes for media texts • Chart paper to brainstorm • Tape • DVD – ‘<i>Respect yo’ Mama: Here Comes Mr. Recycle Man’</i> • Book – ‘<i>Earth-Friendly Waste Management’</i> By Charlotte Wilcox • Picture from ECO-CELL (2008) website • Media text/reflection assignment outline • Social action project: Plan outline • Assessment rubric (see attached) 	<ul style="list-style-type: none"> • For the future drama lesson where the students will create a skit, it may be performed for individual classes separately or on the stage in the gym. • There could be a social action project club run once a week at lunch.
Accommodations	
<ul style="list-style-type: none"> • This lesson includes many different activities that address different learning styles: auditory, visual (media text, picture books, video), kinesthetic (skit) and linguistic (reflection) (Hoerr, 2003). • READING DIFFICULTY: The students are working in pairs for the media text assignment which will assist any student with reading difficulty in understanding the assignment guidelines. I will circulate the room to ensure everyone understands and is following the assignment guidelines. • Extra time activity for students who finish early: brainstorm a plan for a social action project. If these students are interested they may begin to place their social action project on the worksheet provided for the gifted students. • Gifted Students: will automatically receive a worksheet to plan a social action project. PLEASE SEE ATTACHED FOR THE SOCIAL ACTION PROJECT PLAN OUTLINE WORKSHEET. 	
Stage 3: Learning experience and instruction	
Motivational Hook (5 MINS.)	
<ul style="list-style-type: none"> • Show them a picture of all of the cell phones in a land fill from the ECO-CELL (2008) website http://www.eco-cell.org/cellwaste.asp. Ask the students, “What is wrong with this picture?” 	
Open (10 MINS.)	
<ul style="list-style-type: none"> • Read two sections from the book ‘<i>Earth-Friendly Waste Management’</i> By Charlotte Wilcox: page 14: ‘<i>Trouble for the Environment’</i> and page 15: ‘<i>A Growing Problem’</i> • Read one section from the book ‘<i>Making a Difference: Recycling Materials’</i> by Sue Barraclough: page 24-25: ‘<i>Recycle it Safely’</i>. 	
Body (35 MINS.)	
<ul style="list-style-type: none"> • Introduce the concept of wants/needs. • Brainstorm human wants/needs and how peoples wants/needs impact the environment (human-environment interaction). This brainstorming should focus on two areas: electronics (want) and non-electronics (need) (e.g. Water, food). 	

- Create a final list of the negative impacts cell phones and other electronics have on the environment.
- Discuss how students can use different media texts (e.g. Comics, posters, collage/scrapbook, graffiti and a skit to persuade people to think about their actions).

Close - 105 MINS.: Introduce project (10 MINS.), creation of the media text/reflection (60 MINS.), video, 'Respect yo' Mama: Here Comes Mr. Recycle Man' (35 MINS.).

- Introduce the media text project: comics, posters, collage/scrapbook and graffiti. After completion of the media text, the students will write a reflection in pairs on their text. **PLEASE SEE ATTACHED FOR A COMPLETE OUTLINE OF WHAT IS EXPECTED FOR THE MEDIA TEXT AND REFLECTION.**
- ANSWER ANY QUESTIONS RELATED TO MEDIA TEXT ASSIGNMENT.
- The media text must be completed before they move on to work in small groups to create a skit in a future lesson (next class).
- They will work in groups of two on the media text.
- Whole class discussing/debriefing on what the students have learned.
- Show video, 'Respect yo' Mama: Here Comes Mr. Recycle Man'

Link to Future Lessons

- Students work in groups of four to create a skit about wants vs. needs.
- Whole class discussion to debrief students on learning experiences.
- The students should learn more about how things are recycled at the end of all activities –VIDEO: 'Respect yo' Mama: Here Comes Mr. Recycle Man'

There is also a possible link to a social action project lesson if many students are inspired to undertake this kind of project

Assessment

The student's level of participation in brainstorming activities and class discussions will be recorded in a chart (in my assessment binder). Students will write a short reflection on their opinions and conclusions on what they have learned from completing this social justice lesson. Their media texts and reflections should be evaluated based on the following criteria: knowledge and understanding, thinking, communication and application. **PLEASE SEE ATTACHED RUBRIC FOR EVALUATING THE MEDIA TEXTS AND REFLECTIONS.**

Media Text Assignment

- With a partner you are to choose one of the following media texts to create during class time:
 - A comic strip
 - A poster advertisement
 - A collage
 - A scrapbook entry
 - A piece of graffiti
- Your media text must persuade people to recycle and incorporate the following key ideas we talked about in our lesson:
 - Wants and needs
 - Our (human) interaction with the environment
 - Landfills
 - Recycling
 - Electronics (e.g., cell phones)
- When you have completed your media text you must write a reflection with your partner that includes your opinions and conclusions about what you have learned from this lesson. Your reflection should be written in your language arts journal.
- You will be marked on both your media text and reflection.
- **NOTE YOUR MEDIA TEXTS WILL BE DISPLAYED AROUND THE SCHOOL**
- **SUPPLIES TO CREATE YOUR MEDIA TEXT WILL BE AVAILABLE AT THE FRONT OF THE ROOM AFTER YOU HAVE MADE A PLAN IN YOUR LANGUAGE ARTS JOURNAL AND HAD IT APPROVED**



Social Action Project Plan Outline

Social Action Project Plan Outline

I am thinking about completing a social action project on....

I would like to work on this social action project because....

I will complete this social action project by....

(Please provide me with examples of how you will go about your social action project: raising money to donate, creating media texts, starting a club, or any other idea you may have.)

PLEASE SEE ME TO HAVE YOUR PLAN APPROVED

Assessment Rubric – Electronics: Wants or Needs?

Knowledge/Skills	Level 1	Level 2	Level 3	Level 4
<p>Knowledge and Understanding of Concepts</p> <p><i>(e.g. wants/needs, human/environment interaction, landfills, using media texts to persuade people)</i></p>	Demonstrates limited understanding and knowledge of content. Very little information/detail provided in project and reflection to demonstrate understanding.	Demonstrates some understanding and knowledge of content. Information/details provided in project and reflection are lacking.	Demonstrates considerable understanding and knowledge of content. Information/details provided in project are clear and adequate.	Demonstrates through understanding and knowledge of content. A considerable amount of information/details are provided in the project and are clear.
<p>Critical Thinking Skills</p> <p><i>(e.g. appropriate planning for the representation of media text, ability to draw connections between people and the environment, forming conclusions)</i></p>	Demonstrates limited critical thinking skills. Shows a limited ability to make connections and form conclusions in their reflection.	Demonstrates some critical thinking skills. Some effort in making connections and forming conclusions is present in their reflection.	Demonstrates considerable use of critical thinking skills. Connections and conclusions in their reflection are adequate and clear.	Demonstrates critical thinking skills to a high degree. The student is able to make numerous connections and conclusions in their reflection.
<p>Communication</p> <p><i>(e.g. the student is able to communicate the message of the need for recycling, the difference between wants/needs and human/environment interaction in a persuasive manner)</i></p>	Demonstrates a limited ability to communicate the message through their media text.	Demonstrates some ability to communicate the message through their media text.	Demonstrates considerable ability to communicate the message through their media text.	Demonstrates a high degree of ability to communicate the message through their media text.
<p>Application</p> <p><i>(e.g. the student is able to apply the knowledge which they have learned to their everyday lives, their community and the world)</i></p>	Demonstrates a limited ability to apply the knowledge learned in their reflection.	Demonstrates some ability to apply the knowledge learned in their reflection.	Demonstrates considerable ability to apply the knowledge learned in their reflection.	Demonstrates the ability to apply the knowledge learned to a high degree of effectiveness in their reflection.

Coltan: Grade 4 Lesson Plan

Title: <u>Do We Change the Lives of Animals?</u>		Subject/Course: <u>Science/ Language Arts/Drama</u>	
Topic: <u>Social Action/Conservation</u>		Time: <u>50 Minutes x3 classes</u>	
Created by: <u>Kelly Dao</u>		Grades: <u>4</u>	
Lesson Description			
This lesson will ask students to consider the ways in which humans impact the habitats and behaviours of animals in the African rain forest using the National Geographic website. Students will focus, discuss, research, and analyze how human contact changes the behaviours of Mountain Gorillas in the Democratic Republic of Congo (DRC).			
Stage 1: Desired Results			
Fundamental Concepts			
<ul style="list-style-type: none"> • Systems and Interactions • Sustainability and Stewardship 			
Big Ideas			
<ul style="list-style-type: none"> • How human behaviours and choices impact the habitats of wild animals. • Humans need to protect wild animals 			
Ontario Curricular Overall Expectation- Science and Technology- Grade 2, Understanding Life Systems, Growth and Changes in Animals			
<ul style="list-style-type: none"> • Analyse the effects of human activities on habitats and communities; • Demonstrate an understanding of habitats and communities and the relationship among the plants and animals that live in them 			
Ontario Curricular Specific Expectation			
<ul style="list-style-type: none"> • Analyse the positive and negative impacts of human interactions with natural habitats and communities, and evaluate ways of minimizing the negative impacts (1.1) • Use scientific inquiry/research skills to investigate ways in which plants and animals in a community depend on features of their habitat to meet important needs (2.3) • Identify factors that affect the ability of plants and animals to survive in a specific habitat (3.3) • Explain why changes in the environment have a greater impact on specialized species than on generalized species (3.8) 			
Lesson Goals			
<ul style="list-style-type: none"> • Students will understanding how humans impact the environment and habitats of animals and the important roles humans play in protecting animal habitats in areas such as the DRC. • Students will look into the long-term effects of human contact on animal behaviour and social structure. • Students will make statements on human impacts on Mountain Gorillas in the DRC for their local news crew. 			
Key concepts and/or skills to be learned/applied:		Background Knowledge:	
<ul style="list-style-type: none"> • See Ontario Curriculum concepts, ideas, expectations 		<ul style="list-style-type: none"> • Students will have completed prior lessons on different types of habitats and the role it plays in the animals' existence. 	
Stage 2: Planning learning experience and instruction			
Student Groupings		Instructional Strategies	
<ul style="list-style-type: none"> • Whole class discussion • Small group work 		<ul style="list-style-type: none"> • Summarizing • Cooperative learning • Direct instruction • Cues & questions 	
Materials		Considerations	
<ul style="list-style-type: none"> • Visual aid of the DRC • Two YouTube videos of Mountain Gorillas in the DRC • <i>National Geographic</i> website activities • Computer with Internet access 		<ul style="list-style-type: none"> • Due to the negative nature of the global issue, present any progress that has been made on the issue. Some video footage of dead gorillas may be inappropriate for some students, although it may be important information 	
Accommodations			

Maps, magazines and videos will be used for visual learners. The information presented will be discussed with the whole class and in smaller groups for auditory learners. The *National Geographic* website has activities and videos for kinesthetic learners. Students with learning difficulties can be paired up with stronger students for additional assistance.

Stage 3: Learning experience and instruction

Motivational Hook – 10 minutes

- Break the class up into three groups: Group 1 - birds, Group 2 – trees, Group 3 – humans.
- Have the students role-play their characters. The birds will live in the trees and the humans will go around ‘cutting’ the trees.
- The teacher tells a story on what happens to the trees and birds when humans influence the environment
- Once all the trees have been cut down, the birds will have no place to live. The students will then discuss how they felt in their roles and how they felt about the other characters.

Open – 5 minutes

- Introduce how human impact affects the environment and habitats of animals. Watch the WWF video on Congo Mountain Gorilla - http://www.youtube.com/watch?v=LacFBhow_rY

Body – 110 minutes

- Class discussion on the video:
 - How do they feel about human impacts on the Mountain Gorillas in the DRC?
 - Why are they not safe?
 - What can humans do to protect their habitat?
- Students will visit the *National Geographic Outpost* website to read and learn about Michael Fay’s Congo Trek - <http://www.nationalgeographic.com/congotrek360/>
- Each student will complete the worksheet
- In small groups, students will discuss why this trek is important and what he learned during his trek.
- Students will then read about his interactions with the animals. Have students take notes and make points on how the presence of humans in the DRC affects Gorillas’ behaviours.
- Present their ideas with the class.
- Students will then visit the *National Geographic for Kids* website to go on a scavenger hunt – <http://magma.nationalgeographic.com/ngexplorer/0109/adventures/scavenger.html>

Close – 20 minutes

- Students pretend they have just returned from spending a few weeks in the DRC with Fay. They are now at home and are being interviewed to share their experiences with everyone. The students will prepare statements addressing the following points:
 - Why is Fay on this trek?
 - How will his trek help the wild animals and what will happen to these animals if people don’t get involved?
 - What will they do to help make a difference
- In their small groups, students will present their responses as a presentation or as a role-play

Link to Future Lessons

Students will look into other animal habitats around the world and how humans affect these environments. Students will also create an ad campaign to help save these animals with the use of posters, comics, or commercials.

Assessment

The presentations will be a formative assessment based on students understanding of the issue and their engagement in learning. Teachers will use a checklist that looks for: completion, demonstration of understanding, communication, participation, and effort in wanting to make a positive change

Congo Trek 360

A Journey through the Heart of Central Africa

Visit the National Geographic Outpost at <http://www.nationalgeographic.com/congotrek360/>

Answer the following questions:

1. Why did Michael Fay go on this expedition?

2. How far did Fay hike? _____

3. Which animals did he come across on his hike (name 3)?

4. Try to find the leech (it looks like a pink worm). How did Fay get ride of the leech on his ankle?

5. Why were the gorillas aggressive?

6. What is the name of the insect that bothers Fay? Why?

7. What is something you see humans have left in this jungle?

Presentation Checklist – Formative Assessment

Name: _____ Grade: _____ Date: _____

Teacher: _____ School: _____

Completion: **Not Yet** **Some** **Most**

- Worksheet is completed
- Scavenger Hunt completed
- Presentation completed
- Uses outside sources (e.g. books, websites, etc)

Understanding:

- Recognizes different impacts of humans
- Identifies human affects on Gorilla habitats
- Discuss how they can make a difference
- Able to discuss human impacts on local animals
- Can make inferences from what is read

Communication:

- Presents information in an organized format
- Speaks clearly and fluently
- Uses appropriate vocabulary from the lesson

Participation:

- Engages in class/group discussions
- Uses class time effectively
- Works cooperatively with peers and group members

Coltan: Grade 5 Lesson Plan

Title: <u>Whatcha buyin' ?</u>		Subject/Course: <u>language arts</u>		Time: <u>50 Minutes</u>	
Topic: <u>Coltan/Social Action/ Media Literacy</u>		Grades: <u>Grade 5</u>		Created by: <u>SB</u>	
Lesson Description					
This lesson can be used as an introduction to a study on the effects of media on our thinking. Students will analyze advertisements for electronics, exploring the intended audience and messages sent by the images. Students will also be exposed to the potential harmful affects of coltan that is present in most electronics, and their role in bringing about change in this area.					
Stage 1: Desired Results					
Fundamental Concepts					
<ul style="list-style-type: none"> Do we always need what we buy? What we buy here has global impacts 					
Big Ideas					
<ul style="list-style-type: none"> Choices that we make and things that we buy can have global impacts. Advertisements can be very influential. 					
Ontario Curricular Overall Expectation					
<ul style="list-style-type: none"> Demonstrate an understanding of a variety of media texts; Identify some media forms and explain how the conventions and techniques associated with them are used to create meaning. 					
Ontario Curricular Specific Expectation					
<ul style="list-style-type: none"> Identify the purpose and audience for a variety of media texts and/or experiences presented in media (1.1) Identify who produces various media texts, the reason for their production, how they are produced, and how they are funded (1.6) Describe in detail the topic, purpose, and audience for media texts they plan to create (3.1) 					
Lesson Goals					
<ul style="list-style-type: none"> To expose students to the issues surrounding coltan extraction and trade. To explore the influences of media on us as consumers. 					
Key concepts and/or skills to be learned/applied:			Background Knowledge:		
<ul style="list-style-type: none"> Critical thinking as it applies to media literacy Generating creative responses to social/environmental issues 			<ul style="list-style-type: none"> Students have completed previous lessons on media literacy. Students have a basic understanding of the impact of habitat destruction on species of animals 		
Stage 2: Planning learning experience and instruction					
Student Groupings			Instructional Strategies		
<ul style="list-style-type: none"> Whole class discussion Small group work Whole class discussion 			<ul style="list-style-type: none"> Identifying similarities and differences Summarizing Direct instruction Cooperative learning Cues & questions 		
Materials			Considerations		
<ul style="list-style-type: none"> Advertisements for electronics (Appendix A) <i>Col-What? Coltan!</i> Film (Appendix B) Coltan film mind-map worksheet (Appendix C) Play Station 2 (PS2) production story (Appendix D) Assessment checklist for mind-map worksheet and advertisement analysis (Appendix E) Motorolla Mining of Metals Statement (http://www.motorola.com/content.jsp?globalObjectId= 			<ul style="list-style-type: none"> It is important to be sensitive when discussing the connection between gaming consoles and Coltan extraction and use 		

Accommodations

- ESL: Provide many pictorial representations and allow students to create a collage using magazines, expressing what they've learned on the topic.

Stage 3: Learning experience and instruction**Motivational Hook (5 Minutes)**

- Divide students into groups of 3-5 and give each group an advertisement for an electronic product.

Open (10 Minutes)

- Have the students analyze the pictures by asking some guiding questions:
 - × What is going on in the ad?
 - × Who are they trying to sell to? (kids, adults, boys, girls, etc)
 - × What messages are the advertisers send?
 - × Would you buy this product? Why or Why not?

Body (20 Minutes)

- Show students a map of the world and have them identify Canada, and the Democratic Republic of Congo. They are very far apart, but are connected.
- Watch film presentation, discussing coltan and its use in electronics.
- Students fill in answers on a mind-map worksheet in regards to social and environmental problems associated with coltan extraction.
- These issues include: environmental impacts, coltan trade and its role in conflict, and children's role (mining, soldiers, and consumers of electronic products).
- Discuss answers to the mind-map worksheet, Has anyone thought of some other implications of coltan mining that were not mentioned on the worksheet?
- Read the information on PS2, and have the students track the production of a PS2 on a world map, eventually connecting the DRC with Canada. (From DRC to Asia for manufacturing, to North America to be sold)
- PS2 (and other more current game systems) are products that children want. What we buy is connected to many people around the world.
- Where do we fit in the coltan story? Place yourself on your mind-map and explain why you placed yourself in a certain area (i.e. I use electronics, so I placed myself in that section)

Close (15 Minutes)

- Read the statement by Motorola regarding their use of Congolese coltan. This is a company that has changed how they do things because people who buy their products asked questions. What can we do to help the problem? Brainstorm with students ways to make a positive change. Add ideas to the mind-map worksheet Some ideas may include:
 - × Write letters to companies asking where their coltan comes from.
 - × Look at advertisements – who are they trying to sell to? Do I really need this product?
 - × Buy from companies who make an effort to use coltan that comes from safer sources.
 - × Recycle electronics at a place that extracts the coltan from the product.
 - × Be happy with the stuff you already have! Don't buy a new phone/game system/computer as often.

Link to Future Lessons

- Write letters to government or companies, asking about where their coltan comes from.
- Explore more in depth the environmental effects of mining and electronics recycling.
- Create a media campaign in the school, educating others about coltan.

Assessment

The purpose of the assessment of this activity is formative. Teacher will check worksheets for completion and demonstrated comprehension of concepts. Observation notes to be written for students' responses to, and analysis of advertisements.

Sample Advertisements



Cool phones



Transforms from a phone to a messaging keyboard right before your eyes.
Introducing the **Nokia 6230**

NOKIA
CONNECTED PEOPLE
nokia.ca



Wii Fit

05.21.08

How will it move you?

wiiit.com



iPod

Welcome to the digital music revolution. 100 songs in your pocket. Works with Mac or PC. Over a million uses. The new iPod.

Playstation War

We've learned a bit about coltan and its use in many different electronic devices. I wonder how long this has been going on?

In 1999, Sony announced the release of a new video game system called the playstation 2. It was very popular, and millions of people ordered one before they were even in stores! Sony, the company who made the PS2, had to make a lot of PS2 game systems in a short time. They needed lots of parts and materials very quickly. One of the materials they used in the PS2 was coltan. Between 1999 and 2001, the price of coltan jumped from \$49 a pound to \$275 a pound. This was the time that Sony was making the PS2.

We've already heard many of the bad things that have happened around coltan. It is sold illegally, children are forced to mine it, and the environment is destroyed in the areas where it is mined.

Many kids your age ordered PlayStation 2 game systems, and didn't realize that there have been major problems caused by one of the materials in their toy. Coltan is still used in many electronics. When we choose to buy products from certain companies, we need to ask about where their coltan comes from! What we buy matters!

Assessment

Mind-Map Worksheet assessment checklist

- Each section of work sheet is filled out with correct information from the video
- Student demonstrates understanding of concepts presented in the video
- Student includes one idea for a response to the coltan problem (can be an idea discussed in class).
- Student is able to place themselves in the mind-map and rationalize their placement (i.e. I use electronics, so I placed myself in that section)

Things to consider when observing student responses to advertisements:

- Is the student able to describe the advertisement?
- Is the student able to identify who the advertisement is intended for and rationalize their response?
- Is the student able to identify the overt and implied message in the advertisement?
- Can the student form an opinion regarding the product based on the advertisement, and support their opinion with reasoning?

Coltan: Grade 6 Lesson Plan

Title: <u>Social Action in Action!</u>	Subject/course: <u>Science</u>	Time: <u>4 x 70 minutes</u>
Topic: <u>Coltan/social action/biodiversity</u>	Grade: <u>Grade 6</u>	Created by: <u>OP</u>
Global Big Idea: Overriding Classroom Guiding Principle		
Inspire global understanding to encourage social responsibility, empathy and compassion while exploring how personal action can make the world a better place.		
Lesson Description		
<ul style="list-style-type: none"> • This lesson can be used as a culminating activity for a unit on biodiversity (Science: Understanding Life Systems). • Cross-curricular ties can easily be made with Language Arts. • It is broken into four parts which can either be conducted in succession or over a many class periods: <ol style="list-style-type: none"> 1. Information gathering - web quest <ul style="list-style-type: none"> ✦ Students will conduct research on specific questions relating to coltan and biodiversity. 2. Information sharing - class teach <ul style="list-style-type: none"> ✦ Students will share their research with the rest of the class - eventually piecing together the “whole story”. 3. Transfer of learning - social action campaign <ul style="list-style-type: none"> ✦ In groups, students will produce social action campaign outlining the key issues around coltan production/use and suggested action steps 4. Sharing projects - reflect and celebrate success <ul style="list-style-type: none"> ✦ Students share their social action campaigns with the learning community. • Based on an inquiry & research approach to information gathering and retention whereby students progress through set “stages” designed to help them develop the necessary skills, knowledge, and habits of mind to supports their present and future learning. (Ontario Ministry of Education, 2002). 		
Stage 1: Desired Results		
Fundamental Concepts		
<ul style="list-style-type: none"> • Systems and interactions • Sustainability and stewardship 		
Big Ideas		
<ul style="list-style-type: none"> • Because all living things are connected, maintaining diversity is critical to the health of the planet. • Humans make choices that can have an impact on biodiversity. 		
Ontario Curricular Overall Expectation		
<ul style="list-style-type: none"> • Assess human impacts on biodiversity, and identify ways of preserving biodiversity; • Demonstrate an understanding of biodiversity, its contributions to the stability of natural systems, and its benefits to humans. 		
Ontario Curricular Specific Expectation		
<ul style="list-style-type: none"> • Analyse an issue related to biodiversity, taking different points of view into consideration, propose action that can be taken to preserve biodiversity, and act on the proposal (1.1); • Assess the benefits that human societies derive from biodiversity and the problems that occur when biodiversity is diminished (1.2). 		
Lesson Goals		
<ul style="list-style-type: none"> • Applying knowledge gained about biodiversity, the impact the humans have on our environment, and how our growing demand for natural resources threatens habitats/wildlife - students will develop a social action campaign that communicates the key issues around coltan production/use and suggests action steps. 		
Background knowledge:	Key Concepts:	
<ul style="list-style-type: none"> • All living things (including humans) are connected, maintaining biodiversity is critical to the health of the planet. • Biodiversity includes diversity among individuals, species, and ecosystems. • Specific habitats and the classification of organisms. • Human impacts on species and ecosystems. 	<ul style="list-style-type: none"> • The choices we make as human beings impact the planet. • We have the power to make positive choices. • Social Action comes in many forms and we can make a difference through action. • Application of learnings from Biodiversity unit 	

<ul style="list-style-type: none"> • Understanding of biodiversity as the variety of life on earth, including variety within each species of plant and animal, among species of plants and animals in communities, and among communities and the physical landscapes that support them. • Skills associated to working in small groups: communication & task sharing. • Knowledge of production software. 	<p>in a proactive way.</p>
Stage 2: Planning Learning Experience and Instruction	
Student Groupings	Instructional Strategies
<ul style="list-style-type: none"> • Individual work • Small group work • Whole class discussion 	<ul style="list-style-type: none"> • Researching • Cooperative learning • Cues & questions • Critical thinking • Presenting information
Considerations	Materials
<ul style="list-style-type: none"> • This lesson assumes that classes will have computer access - accommodations can be made if this is not the case: <ul style="list-style-type: none"> ✘ If the class only has access to one computer: groups can work one by one to complete the web-quest. ✘ If the class does not have access to a computer: online or multimedia resources can be reviewed ahead of time and printed out for students to analyse. ✘ Students can produce information posters or storyboards instead of podcasts or PSAs 	<ul style="list-style-type: none"> • Web-quest questionnaire • Jot notes hand-out • Social Action Campaign Planner • Computers • Chart paper • Markers
Accommodations/Differentiation	
<ul style="list-style-type: none"> • The element of choice: students can choose to develop “actions” that are complemented by their learning strengths. • Student grouping will accommodate for those who need help with focus and concentration: supporting those students who may have difficulty with specific concepts, concentration, or processing. 	
Stage 3: Learning Experience and Instruction	
Part I: Information Gathering	(70 Minutes)
<p>Introduce topic:</p> <ul style="list-style-type: none"> • “Now that we’ve learned a little about biodiversity let’s look at a current real-world situation where biodiversity is being impacted by humans: coltan” • Explain that students will be responsible for researching this topic and then teaching their fellow classmates. <p>Web-quest:</p> <ul style="list-style-type: none"> • Hand out “web-quest” questionnaire to students: review it with the whole class. • Divide students into groups of 4-6: depending on your class size. • Assign groups to a section of the “web-quest” • Give students time to complete the questions assigned to their group and develop a plan as to how they will share this information with the class. 	
Part II: Information Sharing	(70 minutes)
<ul style="list-style-type: none"> • Have student groups present their research to the class starting with group #1 and progressing to group#5. • Have students who are not presenting take jot notes of the information being provided reminding them that the information will be posted around the room for future reference. • You may need to fill in some information gaps. • Post students chart-papers up around the room. 	
Part III: Transfer of Learning	(70 minutes + time added if you choose)
<ul style="list-style-type: none"> • In small groups, have students brainstorm different kinds/types of actions that people can take to reduce or reverse the problem. (7 Minutes) 	

- Introduce student project: create a poster, skit, podcast, and storyboard, PSA that communicates the key issues around coltan production/use and suggests action steps - limit skits/podcasts/PSAs to 3 minutes (3 Minutes)
- You may want to limit students to one or two of these options depending on their background knowledge or availability of technologies.
- Review expectations and Rubric with students. (5 Minutes)
- Show “Save the Gorillas” a YouTube video that was created by Canadian fifth graders to get students excited about the project. (www.youtube.com/watch?v=laxwxcseyzk) : explain that this was one action that people their age took. (5 Minutes)
- Hand out “planning a social action campaign” for students to use to help direct their thinking.
- Give students time to work on their campaigns (50 minutes)
- You may want to extend this class period to allow for students to work on their projects or, if need be, allot another time when students can work together.

Part IV: Sharing Production

(70 minutes)

- Give students time to pull things together for their presentations.
- Have students share their social action campaigns with the whole class.

Link to future lessons

- As this lesson is suggested as a culminating activity for a unit on biodiversity it is suggested that it be followed up by a class review of the unit’s key learnings.

Assessment

Throughout the process, an ongoing climate of evaluation and reflection should be encouraged. This can be done in a number of different ways (conferencing, checklist, rubric, self assessment) and assess a number of different elements (group work, knowledge and skills application, creativity). Of these mentioned methods of assessment two have been elaborated upon and included herein:

- Monitor student progress at selected stages during student preparation - see attached “Anecdotal Records for Social Action Plan Conferencing” for possible framework.
- With the students or alone sets the criteria for the assessment of the Social Action Campaign presentation - see attached “Social Action Campaign - Rubric”.



Coltan: Web-quest

Group #1:

1. What is Coltan?
2. What is Coltan used for?

Group #2:

1. Where is Coltan from?
2. How is Coltan mined?

Group #3:

1. What are Okapis & Central African Elephants?
2. How are Okapis & Central African Elephants being affected by the mining of Coltan?

Group #4:

1. What is a Mountain Gorilla?
2. How are Mountain Gorillas and humans being affected by the mining of Coltan?

Group #5:

1. Are there people doing anything about this issue?
What are people doing?



What is Coltan?

What is Coltan used for?

Where is Coltan from?

How is Coltan mined?

What are Okapis & Central African Elephants?

How are Okapis & Central African Elephants being affected by the mining of Coltan?

What is a Mountain Gorilla?

How are Mountain Gorillas and humans being affected by the mining of Coltan?

Are there people doing anything about this issue?

What are people doing?

Planning a Social Action Campaign

What will your group do to help raise awareness about the problems around Coltan use? What steps will you encourage people to take to help out? Use the questions on this page to help you organize your projects.



What will your group do to spread the message and educate others about the issue?

What main facts about the issue will your groups include in the materials you create?

How will you know if your Social Action Campaign is Successful?

Group Names:

Anecdotal Records for Social Action Campaign

Student Names:

Date	Conference Topic	Strengths	Needs	Action to Address Needs

Notes:

--

Social Action Campaign - Rubric

Student Names:

	Wow! (4)	You've Got it (3)	On Your Way (2)	Just Starting (1)
Knowledge and Understanding of Concepts	Extensive information & detail is provided in the Social Action Campaign to demonstrate understanding of the issue.	Information & detail is provided in the Social Action Campaign to demonstrate understanding of the issue.	Some information & detail is provided in the Social Action Campaign to demonstrate understanding of the issue.	Very little information & detail is provided in the Social Action Campaign to demonstrate understanding of the issue.
Critical Thinking Skills	Numerous connections between human activity & biodiversity are made; wide-ranging conclusions are illustrated in their Social Action Campaign.	Connections between human activity & biodiversity are evident; relative conclusions are illustrated in their Social Action Campaign.	Some connections between human activity & biodiversity are evident; limited conclusions are illustrated in their Social Action Campaign.	No connections between human activity & biodiversity are evident; no conclusions are illustrated in their Social Action Campaign.
Communication	Demonstrates a high degree of ability to communicate pertinent information through their Social Action Campaign.	Demonstrates ability to communicate pertinent information through their Social Action Campaign.	Demonstrates some ability to communicate pertinent information through their Social Action Campaign.	Demonstrates a limited ability to communicate pertinent information through their media text.
Application	Demonstrates the ability to apply the knowledge learned to a high degree of effectiveness in their reflection.	Demonstrates considerable ability to apply the knowledge learned in their reflection	Demonstrates some ability to apply the knowledge learned in their reflection	Demonstrates a limited ability to apply the knowledge learned in their reflection.
Organization	Presents expertly organized information.	Information is presented in a organized manner.	Presents information with some organization.	Presents information with limited organization.

Additional Notes:

Articles and Websites

Alden, A. (2009). The scandal of Coltan: A destructive black gold rush. *About.com*. Retrieved February 8, 2009 from <http://geology.about.com/od/conflictminerals/a/coltan.htm>

- An interesting article comparing the mining of Coltan in DRC to the Californian Gold Rush.
- Useful as a resource to acquire some background knowledge on the subject.

Cellular News. (n.d.). *Coltan, gorillas and cellphones*. Retrieved February 8, 2009 from <Http://www.cellular-news.com/coltan/>

- Quite useful as a resource to acquire some back ground knowledge on Coltan; this article discusses the fundamental questions: What is Coltan? How is Coltan mined? What is the relationship between Coltan on the war in Central Africa? What can we do?

ECO-CELL. (2008). *Cellular waste*. Retrieved February 8, 2009 from <Http://www.eco-cell.org/cellwaste.asp>

- A website which presents the environmental impacts of cellular waste. Includes information about toxic chemicals and information about gorilla habitats.

Essick, K. (2001, Jun. 11). Guns, money and cell phones. *The Industry Standard Magazine*. Retrieved February 9, 2009 from <http://www.globalissues.org/article/442/guns-money-and-cell-phones>

- Useful as a resource to acquire some background knowledge on the subject. This article make direct links to cell phone manufactures & use and the war in Central Africa.
- The language in this article could prove difficult for younger students and would therefore need to be altered before introduction into a classroom.

International Affairs Review. (2008). A global approach to regulating trade in conflict goods in The DRC. Retrieved February 8, 2009 from <http://www.iar-gwu.org/node/26>

- This review provides an overall outline of the conflict surrounding coltan extraction in the Congo and includes supporting statistics. This resource would be useful in the classroom because it provides a unique discussion about corporate and consumer social responsibility which could generate meaningful discussion in the classroom about the role of the consumer awareness.

Munn, A., Morse, E. & Ihn, J. (n.d.). *Coltan mining in the Democratic Republic of Congo*. Retrieved February 8, 2009 from http://sitemaker.umich.edu/section002group3/coltan_mining_in_democratic_republic_of_the_congo

- This presentation includes information on Coltan in an analysis of the computer industry's impacts on the environment and society.
- It examines the environmental and social implications of natural resource extraction, manufacturing, use, and disposal through two interacting paradigms perpetuate the computer industry's rapid growth: affluence and conscious poverty.

Rechargeable Battery Recycling Corporation. (2009). *Call 2 recycle: A rechargeable battery Recycling corporation program*. Retrieved February 9, 2009 from <Http://www.rbrc.org/start.php>

- A really neat website where you can input your postal code and a list will be provided with all of the recycling locations in your geographic area which recycle cell phones and rechargeable batteries. Also provides information on their recycling programs and educational resources.

Vesperini, H. (2001, August 1). Congo's Coltan Rush. *BBC News*. Retrieved February 8, 2009 From <http://news.bbc.co.uk/2/hi/africa/1468772.stm>

- An excellent and short news article on the coltan conflict.

Waste Management, Inc. (2008). *Environmental stewardship: Educational resources*. Retrieved February 9, 2009 from <http://www.wm.com/wm/environmental/resources.asp>

- An excellent section on environmental stewardship with many educational resources, lesson plans and links to additional websites.

Environmental Field Trips

Cassandra Petrella

613-580-2424 Ext. 25143

- Cassandra Petrella presents information about landfills to students.

Britannia Water Purification Plant

2731 Cassels Road,
Ottawa, ON
Phone: 613-828-2727

- Learn about how our water supply is cleaned before it runs through the pipes of your house!

Resource List for Students

Books

Barraclough, S. (2008). *Making a difference: Recycling materials*. Mankato, MN: Sea-to-Sea.

- An excellent book which provides an overview of recyclable materials, recyclable materials such as cell phone which contain toxic chemicals, making compost, describes how paper, glass, metal and plastic are recycled and what the recycled material is used to make.
- Also discusses ways to sort and recycle safely (batteries, computers, cell phones).
- Discusses how it is important to buy recycled goods.
- Includes links to websites and a glossary.

Wilcox, C. (2009). *Earth-friendly waste management*. Minneapolis, MN: Lerner.

- This is an excellent book which discusses how the garbage problem has grown over the years and how people moving to cities has compacted the problem.
- Includes sections on where garbage goes (landfills), how the garbage gets sorted, discusses the 3 Rs and how to reuse garbage, including turning feces into energy!

DVD's/Videos

Lee, L. (2006). *Respect Yo' Mama: Here Comes Mr. Recycle Man!* [Documentary Film]. Ashland, OR: Moving Pictures, Inc.

- A video which helps students understand recycling by taking them on a tour of recycling facilities.

Meehland, B. (Executive Producer) & May, J. (Executive Producer). (2002). *The Magic SchoolBus: Holiday Special* [Television broadcast]. Burbank, CA: Warner Vision Entertainment, Inc.

- The students take a field trip to Murph's Recycling Plant and learn about why recycling is good for the planet.

YouTube. (2007). AWF: Ways to Save Mountain Gorillas. Retrieved February 17, 2009 from <http://www.youtube.com/watch?v=3p8GG90zWNw>

YouTube. (2007). WWF: Congo Mountain Gorillas. Retrieved February 17, 2009 from http://www.youtube.com/watch?v=LacFBhow_rY

YouTube. (2007). *In focus: Congo's bloody Coltan*. Retrieved February 8, 2009 from <Http://www.youtube.com/watch?V=3owj1zgn4um>

- A great video which shows people working in the coltan mines and discusses who benefits from the coltan trade. People (children and adults) involved in the coltan trade speak about the issue.

Websites

Glenn, B., Kaplan, K. & Reiner, C. (2003). *Recycle City*. Retrieved February 9, 2009 from <http://www.epa.gov/recyclecity/mainmap.htm>

- An interactive website targeting students, Recycle City offers an online game where students can explore what happens to garbage and cities when citizens are not concerned with taking care of our environment.
- Students or teachers can create their own Recycle City scavenger hunt or go to the Activities area and participate in a cyber city clean up.

National Geographic for Kids. (2008). Congo Trek. Retrieved February 17, 2009 from <http://magma.nationalgeographic.com/ngexplorer/0109/adventures/>

- It's a great website for kids to learn about animals in the Congo and students can play interactive games such as a scavenger hunt in the rainforest or a Congo trek adventure with Michael Fay

National Geographic Expeditions. (2008). Lesson Plans. Retrieved February 17, 2009 from <http://www.nationalgeographic.com/xpeditions/>

- This site is filled with lesson plans, activities, atlas maps, tools, interactive sites and other resources to help teachers plan lessons. It is user-friendly and completely FREE!
- There are links to latest educational programs, daily news, and *National Geographic Kids*.

Coltan and Recycling

For the purpose of this educational package, research was conducted on whether recycling businesses in the Ottawa region recycle their electronics. We contacted 8 companies and asked them a standard 3 questions via telephone. The standard questions that were asked were:

1. Do you know what coltan is?
2. Do you recycle used cell phones?
3. Do you re-use coltan?
4. What do you do with the coltan in the cell phones and electronics that you recycle?
5. If you do not recycle coltan do you know of any companies that do?

The results of our research showed that the recycling companies are not aware of what coltan is, do recycle their cell phones but not at their facility and are not aware of whether the coltan is re-used. Please refer to Appendix A for graphs illustrating the results of the survey conducted.

This information and survey data can be used to help create awareness about the role that consumers and corporations have in recycling coltan. Corporations and recycling businesses need to be more informed about where their electronics are being recycled. On the other hand, consumers need to be aware of what they buy and where it goes at the end of the products life cycle.

Questions: Recycling Companies and Coltan

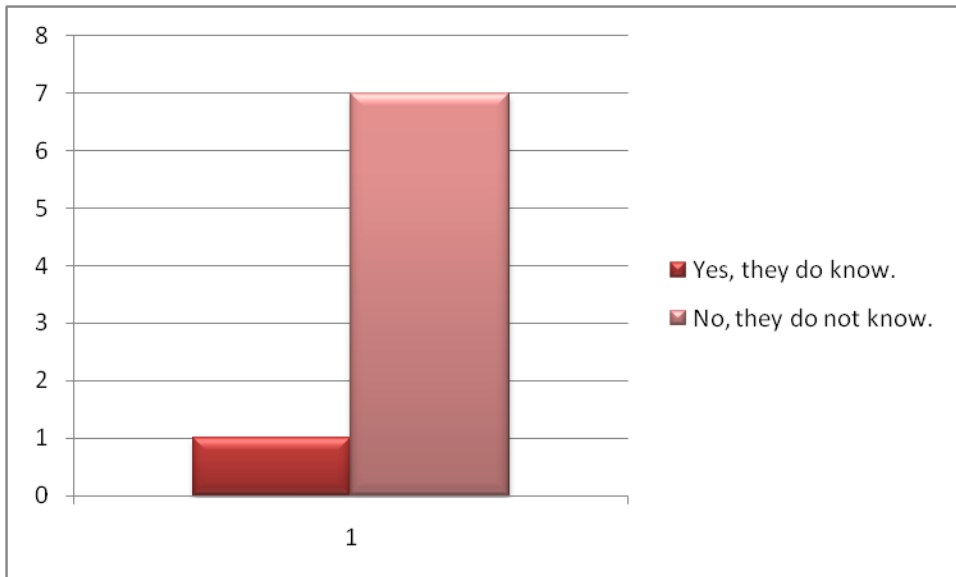
1. Do you know what Coltan is?
2. Do you recycle used cell phones?
3. Do you re-use Coltan?
4. What do you do with the Coltan in the cell phones and electronics that you recycle?
5. If you do not recycle Coltan do you know of any companies that do?

Recycling Company	Answers to Questions
Company A	<ol style="list-style-type: none"> 1. They do not know what Coltan is. 2. Yes, they recycle used cell phones. 3. The recycled cell phones get sent to Montreal and they go into a smelter which melts them. <p>*The person that we spoke to would like to know more about Coltan because they are an environmental company.</p>
Company B	<ol style="list-style-type: none"> 1. Yes, they know what Coltan is. 2. Yes, they recycle used cell phones, but not at their facility. They send it somewhere, but cannot disclose where this is since I am only on the phone. 3. Eventually, yes the Coltan does get re-used. <p>*CANNOT DISCLOSE DOWNSTREAM, BUT IF WE WERE TO GO IN HE COULD TELL US.</p>

Company C	<ol style="list-style-type: none"> 1. No they do not know what Coltan is. 2. Yes, they recycle used cell phones. 3. The cell phones go to government recycling centres. They do not know what happens there. \$ to recycle \$
Company D	DO NOT RECYCLE USED CELL PHONES AND COMPUTERS.
Company E	<ol style="list-style-type: none"> 1. No, they do not know what Coltan is. 2. Yes, they recycle used cell phones. 3. They do not take the cell phones apart themselves, so they do not know what happens. <p>Website to visit: www.rbrc.org</p>
Company F	<ol style="list-style-type: none"> 1. No, they do not know what Coltan is. 2. They take the cell phones to Cohen and Baker, a company that recycles them.
Company G	<ol style="list-style-type: none"> 1. No, they do not know what Coltan is. 2. They only really recycle metals, they recycle computers.
Company H	<ol style="list-style-type: none"> 1. Only really recycle metal. 2. Take computer, but not monitor.

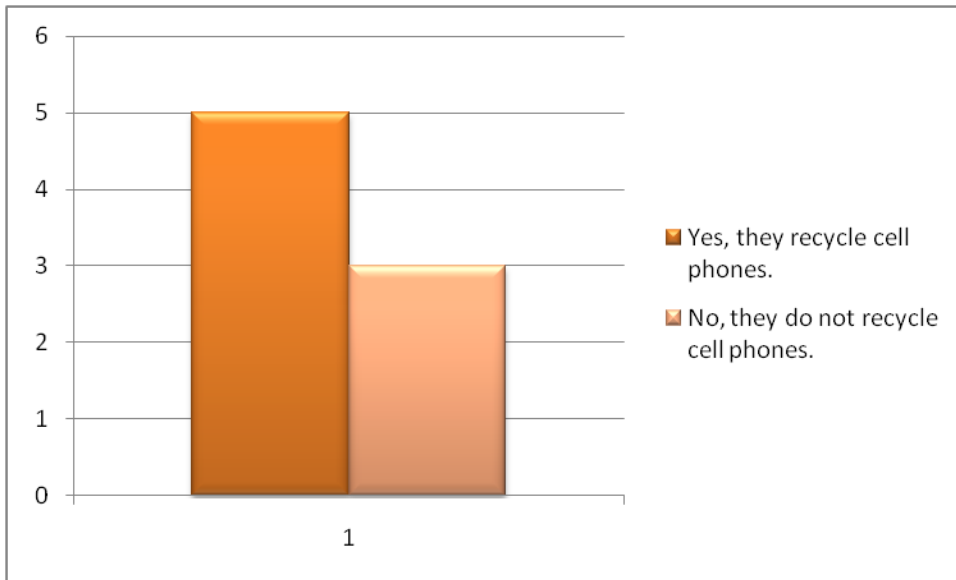
Out of eight Ottawa area recycling companies we asked, "How many know what Coltan is?"

Yes, they do know. 1
No, they do not know. 7



How many of the eight Ottawa area companies recycle cell phones?

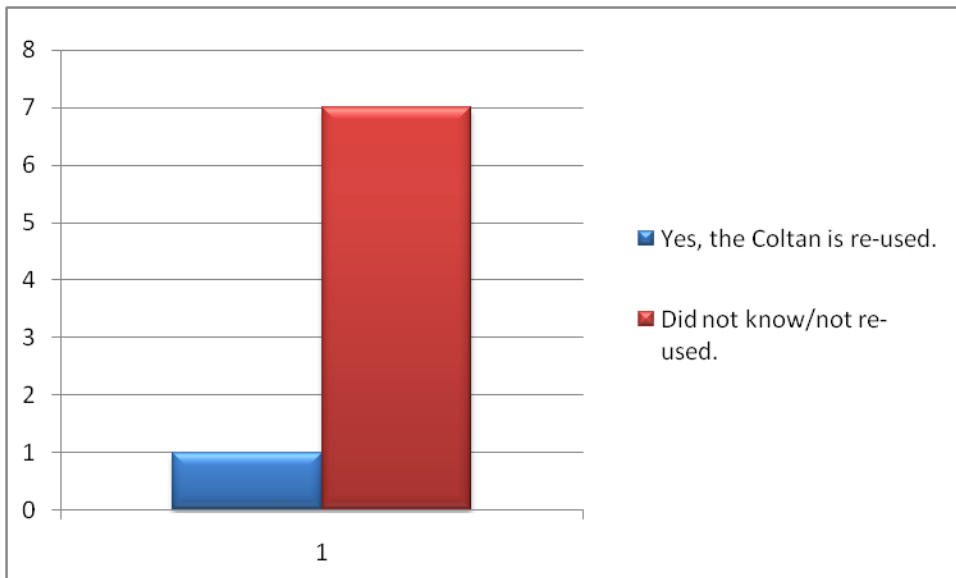
Yes, they recycle cell phones. 5
No, they do not recycle cell phones. 3



Recycling Companies and Coltan: Graphs

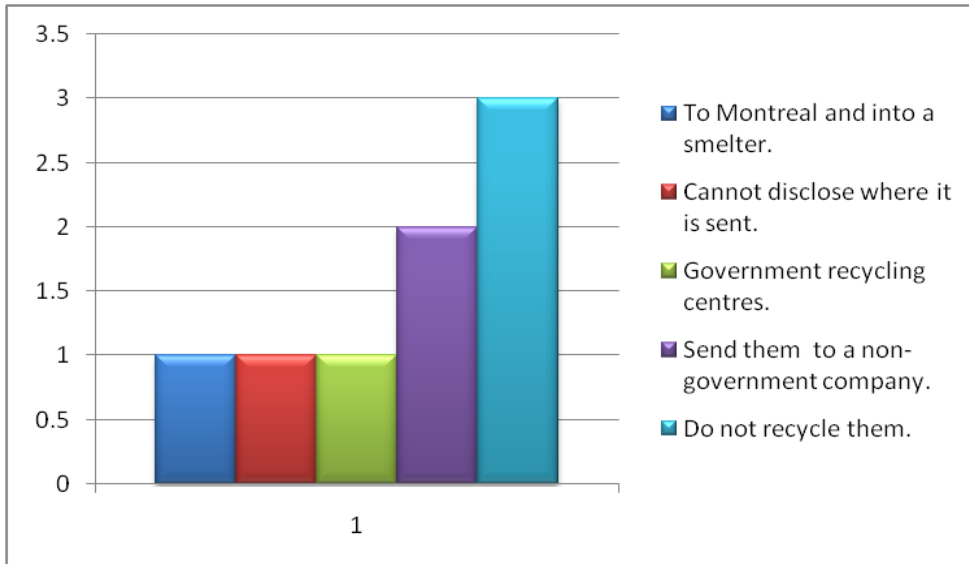
We asked the companies if they knew whether the Coltan from the cell phones was re-used:

Yes, the Coltan is re-used. 1
Did not know/not re-used. 7



Where do the cell phones go after they are recycled?

To Montreal and into a smelter.	1
Cannot disclose where it is sent.	1
Government recycling centres.	1
Send them to a non-government company.	2
Do not recycle them.	3



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