

GRADE 4 LEARNING EXPERIENCE

Cell Phone Waste and Chimpanzees

Summary

Through engaging activities, students will learn about planned and perceived obsolescence. Students will also learn about the types of metals/compounds that are found in cell phones, and the impact that metal mining has on chimpanzee habitat in Africa.

Objective

Students will understand the impact of cell phone waste on the physical environment and animal habitat. Students will also learn about proper electronics recycling in Nova Scotia.

Pre-Activity

WHY THE WASTE?

DIRECTIONS

CLASS DISCUSSION

Ask students to guess how many people live in Canada. Ask them how many cell phones are used in Canada.

Write these facts on the whiteboard:

- Approximately 35 million people live in Canada
- There are about 28 million cell phones in use.
- These phones are replaced about every 18 months.
- Approximately 19 million cell phones are thrown out every year!
- A small portion of the 19 million are recycled: 14-17%.

Ask the class why they think cell phones are replaced so often.

Review reasons for cell phone waste:

Planned obsolescence is when manufacturers intentionally make products that break easily, or become out of date, and require replacement. For example, old cell phones can't run newer software, or new cell phones need different chargers.

(cont'd)

MATERIALS

Whiteboard
and markers

DURATION

10-20 mins

MAIN LEARNING OUTCOME

GRADE:

4

SUBJECTS:

Social Studies



Outcome 4

Students will examine the relationship between humans and the physical environment.

Indicators

- Gather information on how humans interact with the physical environment (with a focus on Canadian Aboriginal perspective).
- Question the impact that humans have on the environment.

CROSS-CURRICULAR LINKS

Science



Outcome 2

Students will investigate the interrelatedness among animals, plants and the environment in local habitats.

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#NothingWasted

WHY THE WASTE? (cont'd)

DIRECTIONS

Once students are familiar with the term “**planned obsolescence**,” have them guess what “**perceived obsolescence**” means.

- **Perceived obsolescence** is when consumers upgrade products to keep up with trends. For example, many people want the newest smartphone, so they throw out a phone that still works but is not the newest release.

Ask students why they think manufacturers would want cell phones to be replaced so often, and how throwing away 19 million cell phones in Canada could have negative impacts.

Activity

CELL PHONES AND CHIMPANZEES

DIRECTIONS

GROUP WORK

Break students into groups and ask them to read the **Call to Action handout (Appendix 1)**.

- Visit the following website to learn more:
www.mobilerecyclingday.org/

Ask groups of students to brainstorm some negative impacts of wasting cell phones.

Examples:

- *Minerals in cell phones come from the Earth.*
- *Mines have to extract minerals to make cell phone parts. Mine construction can destroy forests that are home to animals like chimpanzees.*
- *When cell phones are thrown out and end up in landfills; dangerous chemicals can leach into the ground.*

SMALLER GROUPS

Pair students up to investigate one of the minerals that makes up part of a cell phone. Students can choose one of the following:

- *gold, silver, tin, tungsten, tantalum (coltan), cadmium, lead, lithium, mercury, nickel, zinc*

Students will use the **Cell Phone Scavenger Hunt Worksheet (Appendix 2)** to guide their investigation.

REPORT TO CLASS

Ask students to share what they found from their Scavenger Hunts.

MATERIALS

Appendix 1:
Call to Action handout

DURATION

30 mins

MATERIALS

Internet access

Appendix 2:
Cell Phone Scavenger Hunt worksheet

DURATION

20 mins

DURATION

15 mins

Post-Activity

CELL PHONE RECYCLING

DIRECTIONS

GROUP DISCUSSION

Break students into small groups and ask them to write down what they know about cell phone recycling in Nova Scotia. If they do not know how cell phones can be recycled in the province, have them research it on the internet.

Note: Cell phones can be returned to many retail locations for recycling. Here are two cell phone recycling programs in Nova Scotia:

- **Recycle My Cell** is a Canadian program that manages unwanted devices including cell phones, smartphones, wireless PDAs, device batteries, and pagers.
- **Call2Recycle**® is a North American used battery and cell phone collection program.

Ask groups of students to brainstorm what they can do to help decrease the negative impacts of cell phone waste.

IDEAS: Increase recycling rates of cell phones through an awareness/poster campaign.

Students could start a collection program for cell phones at school.

Encourage family members and friends to keep cell phones longer before replacing them.

OPTION: Have the students create posters to educate people about cell phone recycling.

Assessment

FORMATIVE Evaluate student learning over the course of the class discussion

SUMMATIVE (OPTIONAL) Option to correct the Cell Phone Scavenger Hunt Worksheet

MATERIALS

Paper
internet access

Poster supplies
(optional)

DURATION

30 min



WASTE REDUCTION EDUCATORS

Divert NS provides funding to municipalities to deliver waste reduction education to schools across the province.

Your local waste reduction educator(s) provides the following services, and more, free of charge!

- classroom presentations
- green team set up
- advice on bins and signage
- tours of local waste facilities
- school waste audits

To find out more, visit divertns.ca

ABOUT DIVERT NS

Divert NS is a not-for-profit organization championing recycling in Nova Scotia. For over 20 years we've helped build a culture of recycling through environmental stewardship, education, and innovation. Divert NS operates the **Beverage Container Deposit-Refund Program** and the **Used Tire Management Program**. In addition, we work in collaboration with government,

industry, and academia to divert waste-resources from landfill. Divert NS, in partnership with municipalities, delivers education and awareness programs to schools, businesses, and community groups. Divert NS also works to develop stewardship agreements and funds innovative research and development initiatives.

Toll-free 1.877.313.7732 • info@divertns.ca • divertNS.ca



APPENDIX 1

CELL PHONE WASTE AND CHIMPANZEES

Call to Action

Source: Call to Action www.mobilerecyclingday.org/ (downloaded June 20/2017)



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Protecting Chimpanzees

Mobile phones and many other electronics contain valuable minerals, including gold, tin, tungsten and tantalum (coltan). Some of these minerals are only found in the Congo Basin, and are extracted from the area that has one of the largest intact populations of chimpanzees.



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Mission Connection

The Jane Goodall Institute's work in Africa focuses on protecting chimpanzees and safeguarding their habitats through community centered conservation. Extraction of these natural resources involves destroying the forests that chimpanzees call home. Tracts of forest are cleared to make way for new roads leading to mining sites which then open up previously inaccessible forest to loggers and poachers.



By Jami Dwyer (Public domain), via Wikimedia Commons

Reducing Conflict Among People

In addition, control over the mining of these minerals has fueled conflict among human communities and perpetuated unsustainable livelihoods for the people who live among them. Conflict fueled in part by this industry has resulted in the deaths of more than five million people. Many people have moved into the forests in search of safety from the conflict, which results in hunting of local wildlife for food, including chimpanzees.



Every Individual Makes A Difference

As consumers, we can make a big difference by recycling our phones and reducing the demand for these minerals. Doing so removes these electronics from the waste stream, and also reduces the demand for extraction of resources from the habitats that many species, especially chimpanzees, other great apes, and human beings call home.

Call to Action is an international effort of the **Jane Goodall Institute (JGI)** to inspire action around recycling mobile phones (and other used electronics). Through these actions JGI is raising awareness about how such efforts can help promote conservation of critical habitats across the Congo Basin and around the globe. website: www.mobilerecyclingday.org

APPENDIX 2

CELL PHONE WASTE AND CHIMPANZEES

Name _____

Cell Phone Scavenger Hunt

Here are some minerals used to make cell phones:

gold silver tin tungsten zinc nickel
cadmium lead lithium mercury tantalum (coltan)

Pick one mineral to research, and complete the graphic organizer, below:

Your chosen mineral →		
Information to Hunt For	Answer in Words	Answer in Pictures
What does the mineral look like when it comes out of the ground? What does it look like when it is in a cell phone?		
What countries have mines that get the mineral out of the ground?		
How is the mineral taken out of the ground and turned into cell phone parts?		
What animals and plants live in areas where the minerals are found?		
What happens if the mineral ends up in a landfill?		