Our country has a long history of youth-led movements that brought about significant social change. Young people have advocated for child labor laws, voting rights, civil rights, school desegregation, immigration reform and LGBTQ rights. Through their actions, the world has changed. Because young people often have the desire, energy and idealism to do something about the injustice they see in the world, they are powerful agents for change.

Our work in education helps students examine implicit and overt forms of bias and discrimination and as a result, educators often feel a responsibility to provide students with the structure, opportunity and tools to do something about the injustice they see in the world. Transforming students' feelings of
anger, sadness and hopelessness into concrete actions that can make the world more equitable is a vital teaching opportunity. Voting is one way to get your voice heard but there are a myriad of ways young people can make difference.

Below are ideas for bringing social activism into the classroom and outside of the school walls. These are lifelong skills and attitudes that teach students about citizenship and that there is something you can do when faced with injustice. The strategies can be acted upon individually, organized together as a group and young people can join with a larger effort that is taking place locally or nationally. The tactics also bring opportunities for students to read, write, research, think critically and talk with each other.

1. **Educate others**
   As students learn about an issue they care about, their natural instinct is to share their new knowledge and insight with others. Encourage this by providing live and online opportunities for them to teach others, including their classmates, younger students and adults in their lives. This can include school assemblies, community forums, teach-ins, peer-to-peer programs and social media forums. Include opportunities to share the information in interesting ways (written, art, theatre, etc.) and they should also give other students the chance to explore their own thoughts and feelings about the topics. Youth who want to know more may be more likely to learn from another young person.

2. **Advocate for legislation**
   Change comes about in a variety of ways and one of these is through legislative change. For example, the primary advocates for the DREAM Act have been young people known as the DREAMers, who have a personal investment in the issue. With your students, provide opportunities for them to...
learn about the history and impact of legislative change like the Civil Rights Act of 1964. Help them analyze proposed legislation in relation to their goals and assess the extent to which it will have an impact. They can study research that examines the extent to which legislation impacted injustice. Have students push for legislation by working with other groups with similar goals, building coalitions and writing letters to their legislators to advocate for specific local, state and federal laws.

3. Run for office
Student government provides a chance for students to have a positive impact in their school and learn about how government works on a small scale. It gives youth the experience to reflect on and consolidate their own positions on important school issues, learn how to communicate those positions, build relationships with others and become a good listener in understanding constituent (i.e. other students) needs. It is also good practice for the future in getting involved in politics. Elected positions are not the only way to get involved; students can also become involved in groups like the Gay-Straight Alliance (GSA), peer training or other task forces that are working to improve their school.

4. Protest
Marching in the streets enables students to express themselves and publicly convey what’s happening while meeting and connecting with other people who feel passionate about the same issues. Demonstrations and protests can be uplifting and empowering and can help students feel like they are part of a larger movement. In preparing to attend a protest, have students consider what their goals are in attending the event and think through what message they want to convey. They can create posters, prepare songs or chants and practice symbolism that conveys their thoughts and feelings. They should consider whether they want to do individually or organize a group of students.
from their school to go together, make transportation arrangements and ensure that safety concerns are addressed.

5. Create a public awareness campaign that includes social media
There are many ways to develop or participate in a public awareness campaign. Educating people about an issue in order to inspire change can take place in school, in the community and online. Creating signs and posters using art and photography can be very effective as can videos and live speeches; these are all useful skills that young people can learn. In recent years, the use of social media to raise public awareness has been largely driven by young people and is a useful vehicle for raising issues and effecting change. The use of blogs, social media sites like Instagram, Twitter and Snapchat, videos, memes and online petitions are just a few examples of how words travel fast online and can incite quick and effective action.

6. Do a survey about the issue and share the results
Understanding what people think and why is helpful in bringing about social change. Students can learn more about public opinions on issues by participating in surveys themselves and also reading about them. They can also create their own surveys. Using paper surveys or online surveys, students can gain insight into how other students in their school or the larger community feel about an issue. This is useful in organizing others and addressing their concerns and needs; at the same time it builds math, critical thinking and interpersonal skills.

7. Raise money
Raising money is a concrete way for students to contribute to community or national efforts to address injustice. From organizing a bake sale around a local issue to fundraising on a larger scale for a national concern like racial
disparities in the criminal justice system, raising money helps students feel like they are part of something bigger and backs the cause. Fundraisers can include selling items, auctions, entertainment, sponsoring events and more.

8. **Write a letter to a company**
Students can reach out to companies or organizations that they feel have done something unfair or biased. This is something do-able that can make a difference. For example, if students want to change the ways toy companies use gender role stereotypes to package and sell their toys or games, have them write letters to toy or video game companies and explain why they think their practices are biased. In crafting a well-written letter with evidence and a clear statement of what needs to change, students learn useful skills in persuasion and at the same time, it has a made a difference.

9. **Engage in community service**
In addition to organizing and advocating on a large scale, students should be encouraged to engage in community service on issues they care about. For example, if they are concerned about the stereotypes and violence directed at homeless people, in addition to advocating for legislation or attending a demonstration, students can also donate their time to help out in a homeless shelter or soup kitchen. Serving the people who are directly impacted gives young people firsthand knowledge of the situation, deepens their understanding and builds empathy.

10. **Get the press involved**
Help students understand that bringing publicity to their issue amplifies the message, gets more people concerned and potentially has a greater impact. They can write a press release, do an interview, write an op-ed in their local paper or invite a reporter to see what they are doing and write something
about it. This sharpens their own message and serves to bring that message to a larger group of people.
CELL PHONE MINERALS

Cell phones are used for staying connected, Internet access, text messaging, playing games, various applications, entertainment and taking photos. They have mineral components that come from mining.

Think About It: Do cell phones have anything in common with rocks and minerals? Explain. 

Minerals and Elements in Cell Phone Parts

<table>
<thead>
<tr>
<th>Mineral</th>
<th>Use in Phone Parts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic</td>
<td>Amplifier, receiver</td>
</tr>
<tr>
<td>Copper</td>
<td>Electrical circuitry</td>
</tr>
<tr>
<td>Gallium</td>
<td>Amplifier, receiver</td>
</tr>
<tr>
<td>Gold</td>
<td>Electrical circuitry</td>
</tr>
<tr>
<td>Indium</td>
<td>Liquid Crystal Display (LCD screen)</td>
</tr>
<tr>
<td>Magnesium</td>
<td>Phone casing</td>
</tr>
<tr>
<td>Palladium</td>
<td>Electrical circuitry</td>
</tr>
<tr>
<td>Platinum</td>
<td>Electrical circuitry</td>
</tr>
<tr>
<td>Silver</td>
<td>Electrical circuitry</td>
</tr>
<tr>
<td>Tin</td>
<td>Liquid Crystal Display (LCD screen)</td>
</tr>
<tr>
<td>Tungsten</td>
<td>Electrical circuitry</td>
</tr>
</tbody>
</table>

Directions for Activity: The table below lists many of the mineral resources needed to make cell phones, the percentage of the mineral resource imported by the United States and major sources. Use this table to answer the questions on the back of this page. Note: NA means not available (insufficient data), so leave this out of any calculations. With two tied for #1, the next one would be ranked #3.

Cell Phone Mineral Resource Imports into the United States

<table>
<thead>
<tr>
<th>Mineral Resource</th>
<th>Rank from lowest to highest % imported</th>
<th>Net % Imported</th>
<th>Major Sources</th>
<th>% Self Suficiency (subtract % imported from 100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTIMONY</td>
<td>47</td>
<td>87</td>
<td>China, South Africa, Bolivia, Russia</td>
<td>13</td>
</tr>
<tr>
<td>ARSENIC</td>
<td>10</td>
<td>100</td>
<td>China, Chile, Morocco, Russia</td>
<td></td>
</tr>
<tr>
<td>Bauxite and Alumina</td>
<td>10</td>
<td>100</td>
<td>Australia, China, Brazil, Indonesia</td>
<td></td>
</tr>
<tr>
<td>BERYLLIUM</td>
<td>35</td>
<td>10</td>
<td>United States, China, Mozambique</td>
<td></td>
</tr>
<tr>
<td>COPPER</td>
<td>85</td>
<td>35</td>
<td>Chile, China, Peru, United States</td>
<td></td>
</tr>
<tr>
<td>DIAMOND (dust, grit and powder)</td>
<td>100</td>
<td>0</td>
<td>Botswana, Congo (Kinshasa), Russia, Australia</td>
<td></td>
</tr>
<tr>
<td>Gallium</td>
<td>100</td>
<td>99</td>
<td>China, Germany, Kazakhstan, Ukraine</td>
<td></td>
</tr>
<tr>
<td>Gold</td>
<td>88</td>
<td>0</td>
<td>China, Australia, United States, Russia</td>
<td></td>
</tr>
<tr>
<td>Graphite</td>
<td>88</td>
<td>0</td>
<td>China, India, Brazil, North Korea</td>
<td></td>
</tr>
<tr>
<td>Indium</td>
<td>100</td>
<td>100</td>
<td>China, Canada, Japan, Republic of Korea</td>
<td></td>
</tr>
<tr>
<td>Iodine</td>
<td>100</td>
<td>88</td>
<td>Chile, Japan, China, Azerbaijan, Russia</td>
<td></td>
</tr>
<tr>
<td>Iron Ore</td>
<td>100</td>
<td>0</td>
<td>China, Australia, Brazil, India</td>
<td></td>
</tr>
<tr>
<td>Lead</td>
<td>100</td>
<td>2</td>
<td>China, Australia, United States, Mexico</td>
<td></td>
</tr>
<tr>
<td>Magnesium (compounds)</td>
<td>49</td>
<td>46</td>
<td>China, Russia, Turkey, Austria</td>
<td></td>
</tr>
<tr>
<td>Manganese</td>
<td>100</td>
<td>100</td>
<td>South Africa, Australia, China, Gabon</td>
<td></td>
</tr>
<tr>
<td>Mica, Sheet</td>
<td>100</td>
<td>100</td>
<td>India, Russia</td>
<td></td>
</tr>
<tr>
<td>Nickel</td>
<td>49</td>
<td>49</td>
<td>Philippines, Indonesia, Russia, Australia</td>
<td></td>
</tr>
<tr>
<td>Niobium (columbium)</td>
<td>100</td>
<td>100</td>
<td>China, United States, Brazil, Canada</td>
<td></td>
</tr>
<tr>
<td>Palladium</td>
<td>100</td>
<td>54</td>
<td>South Africa, Canada, United States</td>
<td></td>
</tr>
<tr>
<td>Platinum</td>
<td>100</td>
<td>91</td>
<td>South Africa, Russia, Zimbabwe, Canada</td>
<td></td>
</tr>
<tr>
<td>Quartz Crystal (industrial; cultured)</td>
<td>100</td>
<td>100</td>
<td>China, Japan, Russia (import sources)</td>
<td></td>
</tr>
<tr>
<td>Rare Earths</td>
<td>NA</td>
<td>NA</td>
<td>China, United States, Australia, India</td>
<td></td>
</tr>
<tr>
<td>Silver</td>
<td>57</td>
<td>57</td>
<td>Mexico, China, Peru, Australia</td>
<td></td>
</tr>
<tr>
<td>Tantalum</td>
<td>100</td>
<td>75</td>
<td>China, Indonesia, Peru, Bolivia</td>
<td></td>
</tr>
<tr>
<td>Tin</td>
<td>77</td>
<td>77</td>
<td>South Africa, Australia, Canada, China</td>
<td></td>
</tr>
<tr>
<td>Titanium (mineral concentrates)</td>
<td>77</td>
<td>42</td>
<td>China, Russia, Canada, Austria, Bolivia</td>
<td></td>
</tr>
<tr>
<td>Zinc</td>
<td>72</td>
<td>72</td>
<td>China, Australia, Peru, United States</td>
<td></td>
</tr>
</tbody>
</table>

Source: USGS Mineral Commodity Summaries 2013
1. Does the United States have the resources to make cell phones without using any mineral resources from imported sources? Explain your answer.

2. Gold is important to conduct electricity in cell phones and computer circuit boards. What countries are major sources for gold? If you were going to be a gold miner in one of these countries, which one would you choose? Why?

3. What is the fewest number of countries needed to get the mineral resources to make a cell phone? List the countries.

4. Are there any mineral resources in a cell phone that the United States could get solely from a domestic source? Explain.

5. Describe other uses you know for some of the mineral resources used in a cell phone.

6. Explain why minerals and mining are important to you and your daily life.

Extension Activity
- Individually or in a small group, use the Internet to research how the minerals in a cell phone are mined. Create a diagram for each type of mining done to extract these minerals.
- Label stickers or “post-it” notes with the mineral resources listed in the table and place them on a world map to show the geographic distribution of major sources for the mineral resources needed to make cell phones.

www.MineralsEducationCoalition.org
Cell phones are used for staying connected, Internet access, text messaging, playing games, various applications, entertainment and taking photos. They have mineral components that come from mining.

Think About It: Do cell phones have anything in common with rocks and minerals? Explain. 

Minerals and Elements in Cell Phone Parts

<table>
<thead>
<tr>
<th>Mineral</th>
<th>Part of Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic</td>
<td>Amplifier, receiver</td>
</tr>
<tr>
<td>Copper</td>
<td>Electrical circuitry</td>
</tr>
<tr>
<td>Gallium</td>
<td>Amplifier, receiver</td>
</tr>
<tr>
<td>Gold</td>
<td>Electrical circuitry</td>
</tr>
<tr>
<td>Indium</td>
<td>Liquid Crystal Display (LCD screen)</td>
</tr>
<tr>
<td>Magnesium</td>
<td>Phone casing</td>
</tr>
<tr>
<td>Palladium</td>
<td>Electrical circuitry</td>
</tr>
<tr>
<td>Platinum</td>
<td>Electrical circuitry</td>
</tr>
<tr>
<td>Silver</td>
<td>Electrical circuitry</td>
</tr>
<tr>
<td>Tin</td>
<td>Liquid Crystal Display (LCD screen)</td>
</tr>
<tr>
<td>Tungsten</td>
<td>Electrical circuitry</td>
</tr>
</tbody>
</table>

Directions for Activity: The table below lists many of the mineral resources needed to make cell phones, the percentage of the mineral resource imported by the United States and major sources. Use this table to answer the questions on the back of this page. Note: NA means not available (insufficient data), so leave this out of any calculations. With two tied for #1, the next one would be ranked #3.

Cell Phone Mineral Resource Imports into the United States

<table>
<thead>
<tr>
<th>Mineral Resource</th>
<th>Rank from lowest to highest % imported</th>
<th>Net % Imported</th>
<th>Major Sources</th>
<th>% Self-Sufficiency (Subtract % imported from 100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTIMONY</td>
<td>15</td>
<td>87</td>
<td>China, South Africa, Bolivia, Russia</td>
<td>13</td>
</tr>
<tr>
<td>ARSENIC</td>
<td>19</td>
<td>100</td>
<td>China, Chile, Morocco, Russia</td>
<td>0</td>
</tr>
<tr>
<td>Bauxite and Alumina</td>
<td>19</td>
<td>100</td>
<td>Australia, China, Brazil, Indonesia</td>
<td>0</td>
</tr>
<tr>
<td>Beryllium</td>
<td>4</td>
<td>10</td>
<td>United States, China, Mozambique</td>
<td>90</td>
</tr>
<tr>
<td>Copper</td>
<td>5</td>
<td>35</td>
<td>Chile, China, Peru, United States</td>
<td>65</td>
</tr>
<tr>
<td>Diamond (dust, grit and powder)</td>
<td>14</td>
<td>85</td>
<td>Botswana, Congo (Kinshasa), Russia, Australia</td>
<td>15</td>
</tr>
<tr>
<td>Gallium</td>
<td>18</td>
<td>99</td>
<td>China, Germany, Kazakhstan, Ukraine</td>
<td>1</td>
</tr>
<tr>
<td>Gold</td>
<td>1</td>
<td>0</td>
<td>China, Australia, United States, Russia</td>
<td>100</td>
</tr>
<tr>
<td>Graphite</td>
<td>19</td>
<td>100</td>
<td>China, India, Brazil, North Korea</td>
<td>0</td>
</tr>
<tr>
<td>Indium</td>
<td>19</td>
<td>100</td>
<td>China, Canada, Japan, Republic of Korea</td>
<td>0</td>
</tr>
<tr>
<td>Iodine</td>
<td>16</td>
<td>88</td>
<td>Chile, Japan, China, Azerbaijan, Russia</td>
<td>12</td>
</tr>
<tr>
<td>Iron Ore</td>
<td>1</td>
<td>0</td>
<td>China, Australia, Brazil, India</td>
<td>100</td>
</tr>
<tr>
<td>Lead</td>
<td>3</td>
<td>2</td>
<td>China, Australia, United States, Mexico</td>
<td>98</td>
</tr>
<tr>
<td>Magnesium (compounds)</td>
<td>7</td>
<td>46</td>
<td>China, Russia, Turkey, Austria</td>
<td>54</td>
</tr>
<tr>
<td>Manganese</td>
<td>19</td>
<td>100</td>
<td>South Africa, Australia, China, Gabon</td>
<td>0</td>
</tr>
<tr>
<td>Mica, sheet</td>
<td>19</td>
<td>100</td>
<td>India, Russia</td>
<td>0</td>
</tr>
<tr>
<td>Nickel</td>
<td>8</td>
<td>49</td>
<td>Philippines, Indonesia, Russia, Australia</td>
<td>51</td>
</tr>
<tr>
<td>Niobium (columbium)</td>
<td>19</td>
<td>100</td>
<td>Brazil, Canada</td>
<td>0</td>
</tr>
<tr>
<td>Palladium</td>
<td>9</td>
<td>54</td>
<td>Russia, South Africa, Canada, United States</td>
<td>46</td>
</tr>
<tr>
<td>Platinum</td>
<td>17</td>
<td>91</td>
<td>South Africa, Russia, Zimbabwe, Canada</td>
<td>9</td>
</tr>
<tr>
<td>Quartz Crystal (industrial, cultured)</td>
<td>19</td>
<td>100</td>
<td>China, Japan, Russia (import sources)</td>
<td>0</td>
</tr>
<tr>
<td>Rare Earths</td>
<td>NA</td>
<td>NA</td>
<td>China, United States, Australia, India</td>
<td>NA</td>
</tr>
<tr>
<td>Silver</td>
<td>10</td>
<td>57</td>
<td>Mexico, China, Peru, Australia</td>
<td>43</td>
</tr>
<tr>
<td>Tantalum</td>
<td>19</td>
<td>100</td>
<td>Mozambique, Brazil, Congo (Kinshasa)</td>
<td>0</td>
</tr>
<tr>
<td>Tin</td>
<td>12</td>
<td>75</td>
<td>China, Indonesia, Peru, Bolivia</td>
<td>25</td>
</tr>
<tr>
<td>Titanium (mineral concentrates)</td>
<td>13</td>
<td>77</td>
<td>South Africa, Australia, Canada, China</td>
<td>23</td>
</tr>
<tr>
<td>Tungsten</td>
<td>6</td>
<td>42</td>
<td>China, Russia, Canada, Austria, Bolivia</td>
<td>58</td>
</tr>
<tr>
<td>Zinc</td>
<td>11</td>
<td>72</td>
<td>China, Australia, Peru, United States</td>
<td>28</td>
</tr>
</tbody>
</table>

Source: USGS Mineral Commodity Summaries 2013
Fun Facts:
- Cell phones are really radios.
- The first cell phone call was made on April 3, 1973, by Martin Cooper, a Motorola engineer and executive. He wanted to make a mobile phone after seeing Captain Kirk's "communicator" on the 1960's TV show Star Trek.

1. Does the United States have the resources to make cell phones without using any mineral resources from imported sources? No. Explain your answer. Nine of the minerals used in cell phone production are 100% imported.

2. Gold is important for electricity conduction in cell phones and computer circuit boards. What countries are major sources for gold? China, Australia, United States, and Russia. If you were going to be a gold miner in one of these countries, which one would you choose? Why? 

3. What is the fewest number of countries needed to get the mineral resources to make a cell phone? Three. List the countries. China, Russia, and Brazil.

4. Are there any mineral resources in a cell phone that the United States could get solely from a domestic source? Yes. Explain. The United States is a net exporter of iron and gold and could make a cell phone without having to import those minerals.

5. Describe other uses you know for some of the mineral resources used in a cell phone. Examples:
   - Copper: used in automobile motors, radiators, and brakes; electric cables, wires and switches; plumbing pipes, heating, roofing, jewelry and brass in musical instruments.
   - Gold: used in computers, dental fillings, Olympic medals, Oscars, surgical instruments, jewelry and coins.
   - Iron: used in steel, magnets, auto parts, cosmetics and paints.
   - Quartz: used in glass, telescope lenses, watches, computers and paints.
   - Platinum: jewelry, dental crowns and bridges, automobile exhaust systems, chemotherapy and pacemakers.
   - Silver: used in coins, dental fillings, jewelry, silverware, photography, electrical switches, DVDs, batteries and solar panels.
   - Titanium: used in jet engines, armor-plated vehicles, fireworks, propeller shafts and other ship parts, satellites and spacecraft, and joint replacement.

For more ideas see:
http://www.MineralsEducationCoalition.org/minerals
http://www.Geology.com/minerals
http://www.chemicool.com/elements

6. Explain why minerals and mining are important to you and your daily life.

Extension Activity
- Individually or in a small group, use the Internet to research how the minerals in a cell phone are mined. Create a diagram for each type of mining done to extract these minerals.
- Label stickers or "post-it" notes with the mineral resources listed in the table and place them on a world map to show the geographic distribution of major sources for the mineral resources needed to make cell phones.

www.MineralsEducationCoalition.org
Bird Seed Mining for Conflict Minerals

Introduction:

Mining is a complex process in which relatively small amounts of valuable and useful minerals or metals are extracted from very large masses of rock. Benefication is mineral processing where tungsten, tin, and tantalum along with other components of the rock are separated. Reclamation is the process of making the returning the land to its former condition, making it suitable for beneficial use or habitat. This activity will help you understand some of the phosphate mining processes and the costs/rewards.

Materials:

- Shallow pan - "mine"
- Flat toothpicks
- Plastic spoons
- Forceps
- Magnifying glass
- Calculator
- Plate - "benefaction"
- Ziploc bag containing:
  - Bird seed
  - Beads

Procedure:

1. As a newly formed mining company, you first need to decide upon a name. Our mining company is called: ____________________________

2. You have $50 with which you can purchase mining equipment. You may choose to mine your minerals manually or using advanced technology. The following options are available to you:
   - Wheelbarrows, picks, and shovels = $10 (2 flat toothpicks)
   - Mule-drawn scrapers = $20 (spoon)
   - Dragline = $50 (spoon and forceps)

3. Pour the contents of your Ziploc bag into your mining area (shallow pan). Gently shake the pan to spread out the contents.

4. The following items can be found in your mine:
   - Gold beads = Tantalum = $25
   - Silver beads = Tungsten = $10
   - Metallic gray beads = Tin = $5
   - Sunflower seeds = Copper = $1
   - White beads = Reclamation = $50
   - All other seeds = Waste (tailings) = $0

5. When your teacher says "Begin", use your tools to search through the seed mixture and separate out ("mine") the beads, sunflower seeds and other products, making piles of each on the paper plate.
   - You can ONLY use your tools. NO FINGERS!!

6. Be careful! The Department of Environmental Quality (DEQ) can give environmental fines if you are caught using your fingers or if you are making a mess. You never know who is watching!
7. When “mining” is over, your teacher will say, “STOP!” Count up the number of gold, silver, metallic gray and white beads. Count how many sunflower seeds you have. Enter each of these values in the data table on the last page. Also, record the amount of any environmental damage fines.

8. Total up the dollar value of your “mining” operation. Share your success or failure with the other mines.
   - There will be a prize for the mine that makes the most money!!

Conclusion Questions

1. Were the desired resources evenly distributed throughout the mine? Explain how this relates to real-world mining.

2. What was more economical (earned more money), the resources that were worth more or less? Explain your answer.

3. If valuable mineral resources were discovered within a city or town, should a mining company be allowed to extract the ore? Defend your opinion.

4. How can a mine be beneficial to a town or community?

5. How can a mine be detrimental (bad) for a town or community?

6. Why is it important to practice environmentally responsible mining? Give at least 3 reasons.

7. Why is reclamation an important aspect of mining?

8. Do all places where mining occurs require reclamation? Explain your answer.
9. How does the prospect of greater profits relate to the quantity of resources that is available?

10. Why is mining important globally?

11. What might have happened if, in the middle of your mining process, the teacher came in and took your mine, giving it to another group? How would this make you feel? Why?

12. How might you feel if your mining profits were taken away and given to someone else? Why?

13. Discuss other ways this mining simulation could be modified to represent conditions in a region with conflict minerals. (Be as specific as possible and explain your examples.) Try to come up with at least 2 modifications.
Bird Seed Mining of Conflict Minerals Balance Sheet

Beginning Balance = $150

Equipment Costs: $ ________

Mining Capital (amount available for new purchases) = $ ________

- **Gold Beads = Tantalum:**
  
  Number of beads: _____ x $ 25 = $ ________  
  
  **Value**  **Profit**

- **Silver Beads = Tungsten:**
  
  Number of beads: _____ x $ 10 = $ ________  
  
  **Value**  **Profit**

- **Metallic Gray Beads = Tin:**
  
  Number of beads: _____ x $ 5 = $ ________  
  
  **Value**  **Profit**

- **Sunflower Seeds = Copper**
  
  Number of seeds: _____ x $ 1 = $ ________  
  
  **Value**  **Profit**

Total Value of all Extracted Minerals = $ ________  

(Add together the profits for each mineral resource.)

***NOTE: All other seeds are Tailings (waste) and have zero value.

- **Reclamation Costs**
  
  Number of white beads: _____ x $ 50 = $ ________  
  
  **Value**  **Fees Due to Government**

- **Environmental Damage Fines**
  
  Based upon how messy your mining area has been left: $ ________  
  
  **Environmental Inspector's Decision**

To determine your profits (or losses), subtract any Reclamation Costs and Environmental Damage Fines you may have been given from the total value of the extracted minerals.

$ ________ - $ ________ - $ ________ + $ ________ = $ ________

Total Value of Minerals  Reclamation Costs  Environmental Fines  Mining Capital  Profit/Loss
The Impacts of Mining Resources for Our Electronic Devices

Think back to last week’s activities where we looked at the Global Closet Calculator (https://www.nationalgeographic.org/media/globalcloset/) and analyzed where our clothing comes from. Remember our discussions and the outcomes of our choices when we worked through the manufacture of a pair of jeans and an mp3 player. Try and visualize the videos about mining that we watched in relation to the interactive map for “Mining the World’s Most Used Minerals”. Now, answer the following questions.

1. What is the difference between a “need” and a “want”? 

2. In general, how do our wants and needs affect people locally and across the world? Explain your answer.

3. Think about different materials clothing can be made from. Cotton, which is grown, is used in making T-shirts. Rayon and spandex are made from petroleum. List 3 pros and 3 cons for using each resource.

<table>
<thead>
<tr>
<th></th>
<th>Cotton</th>
<th>Rayon/Spandex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pro</td>
<td></td>
<td>Pro</td>
</tr>
<tr>
<td>Con</td>
<td></td>
<td>Con</td>
</tr>
<tr>
<td>Pro</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Con</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1
4. How does the mining process in developed nations (U.S., Australia, etc.) differ from those in developing nations (Bolivia, Indonesia, etc.)? In your answer, you need to cover the following points: mining processes, refining processes, safety, human labor, and available technology. As you answer this question, be reflective and thorough in your explanations. You should have 2-5 sentences about each topic.

a. Mining Processes: ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________

b. Refining Processes: ______________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________

c. Safety: _________________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________

d. Human Labor: ___________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
5. Based on our discussions and what you’ve seen in the videos, what opened your eyes the most? Explain.

6. How did you feel when you learned about this? Why?

7. What choices might you make differently when it comes to selecting products to buy? Why?

8. How do you think your choices will affect those who contribute to the manufacture and sale of these products? Explain.
Investigation #3
The Hidden Costs of Resource Consumption

Name ________________________________

Student Introduction and Instructions

Most of us take our technology seriously. How could we possible do without our cell phones, our music players, our laptops!? The very thought is incomprehensible to most people today. We purchase new products as they come out and we want them and never really question our consumption. There are many consequences to our use of minerals and metal resources. Many (most?) of these consequences are negative and remain hidden from public view. Resource consumption effects the environment, world economies, and the people where some of these resources are mined.

You many have heard such terms as “blood diamonds”, “conflict minerals”, and “dirty metals”? In this investigation, you will have the opportunity to learn a little about them. You will view two short videos, do some independent research and respond to the questions that follow.

There will be a class discussion of your finding on the due date. Please come prepared to participate.

Here are a few resources to get you started. Following links at these websites will broaden your search:

From Mine to Mobile Phone: the Conflict Mineral Supply Chain

Raising Hope for Congo: Conflict Minerals Initiative
www.raisehopeforcongo.org/content/initiatives/conflictminerals

Conflict Minerals 101

Dirty Metals: Mining, Communities and the Environment
http://www.nodirtygold.org/dirty_metals_report.cfm
Investigation #3
The Hidden Cost of Resource Consumption

Conflict Minerals. Watch the two videos linked here. You will need an internet connection.

Congo’s Gold; 60-Minutes Segment (13 minutes long)
www.cbsnews.com/video/watch/?id=5825990n

Conflict Minerals: Is there blood on your laptop, Time Magazine
http://www.time.com/time/video/player/0,32068,594243401001_2013170,00.html

1. What is the definition of a “conflict mineral”?

2. What areas of the world today are considered conflict “areas”?


4. Who is harmed the most by what is happening in the DNC? Support your answer with reasoning.

5. Identify the four metals that are mined in the DRC. What is each used for?

6. How much gold on the world market comes from DRC? What is the US dollar value of this gold?

7. Are there alternative metals that could be used? If so, identify them.

8. From the videos you watched and the research you did. Describe the environmental impacts associated with mining in these conflict zones. Are any of these costs passed on the consumer of the products made with the metals?

9. Discuss what you think is the best way for governments to address the conflict mineral issue. Identify any specific actions that they could take to resolve the situation. Is the U.S. government doing anything about the problem?

10. Discuss what you think is the best way for the electronics (and other) industry to address the conflict mineral issue. Do you think they have a responsibility to take any action? Or are they just in the business to make profit, no matter what? Support your arguments.

11. Discuss what you think is the best way for individuals to address the conflict mineral issue. Is it important to you? Why or why not?
Outlining your Persuasive Letter

We’ll be using the “OREO” method for our letter. O = opinion, R = reason, E = example, O = Opinion

The “O’s” will be found in your opening paragraph. For the body of the letter, you will need three reasons, each with their own example. Remember, you want to give them as many reasons as you can for why they should stop using conflict minerals in their devices. Therefore, your reasons should be different enough to do this; for example, you shouldn’t have all of them about child labor. The final “O” is your closing sentence.

1. How can you get your reader’s attention so they are interested in your topic? Write two interesting introductory opinion sentences below.

   a. ____________________________________________________________

   b. ____________________________________________________________

2. Choose 10 “Power” words that you can use in your persuasive letter. Record them below.

   ____________________________________________________________

   ____________________________________________________________

   ____________________________________________________________

   ____________________________________________________________

   ____________________________________________________________

   ____________________________________________________________

   ____________________________________________________________

   ____________________________________________________________

   ____________________________________________________________

   ____________________________________________________________

3. Now, think of how you will use them in the body of your letter. You don’t have to use all of them. More isn’t always better; chose those you think will have the most impact in support of your reasons. Write your reasons and accompanying examples below.

   Reason/Example 1: _____________________________________________

   ____________________________________________________________

   ____________________________________________________________

   ____________________________________________________________

   ____________________________________________________________

   ____________________________________________________________
Reason/Example 2:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Reason/Example 3:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

4. How can you end your persuasive letter? Remember, you want to leave the reader as convinced as possible by your ideas. Write two compelling closing sentences below.

a. _______________________________________________________________________

   _______________________________________________________________________

b. _______________________________________________________________________

   _______________________________________________________________________
## Strong Words for Persuasive Writing

### Introductory Phrases

- In my opinion
- From where I stand
- It is my belief that
- As you can see
- In any event
- For the reasons above
- In other words
- First, Second, Third...
- In addition
- Equally important
- For example
- As evidence
- If... then...
- Due to
- Consequently
- In effect

### Concluding Phrases

- To be sure
- Obviously
- To be sure
- On the whole
- In any case
- In summary
- Undoubtedly
- Without a doubt

### Supporting Opinions

- Furthermore
- In the first place
- Moreover
- Besides
- Similarly
- Also

### Introducing Details

- In fact
- In support of this
- For instance
- Examples include

### Cause and Effect

- Since
- For this reason
- This results in
- As might be expected
- Because of
- Therefore
- As a result of
- Leading to

### Compare and Contrast

- Compared to
- Even though
- As opposed to
- Nevertheless
- Whether or not
- On the other hand
- Likewise
- Rather than
- All are
- In spite of

### Counterargument

- I understand you
- Some people might
- On the other hand
- Even though you
- I doubt
- Let me explain
## Conflict Minerals – Persuasive Letter Grading Rubric

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salutation &amp; Closing</td>
<td>• Salutation and closing are appropriate for the audience. AND</td>
<td>• Salutation and closing are somewhat appropriate for the audience. AND/OR</td>
<td>• Salutation and closing are inappropriate for the audience. AND/OR</td>
<td>• Salutation and/or closing are missing.</td>
</tr>
<tr>
<td></td>
<td>• There are no errors in capitalization and punctuation.</td>
<td>• There are 1-2 errors in capitalization and punctuation.</td>
<td>• There are 3-4 errors in capitalization and punctuation</td>
<td></td>
</tr>
<tr>
<td>Ideas</td>
<td>• Ideas are expressed in a clear and organized fashion.</td>
<td>• Ideas are expressed in a generally clear manner, but organization could be better.</td>
<td>• Ideas are somewhat organized, but aren’t very clear.</td>
<td>• The letter seems to be a collection of unrelated sentences.</td>
</tr>
<tr>
<td></td>
<td>• It is easy to figure out what the letter is about.</td>
<td>• Reader can understand what it is about.</td>
<td>• It takes more than one reading to figure out what it is about.</td>
<td>• It is very difficult to figure out what it is about.</td>
</tr>
<tr>
<td>Content</td>
<td>• Introduction paragraph is a strong opinion statement about conflict minerals.</td>
<td>• Body of letter includes 3 different reasons accompanied by valid examples backed by cited sources.</td>
<td>• Introduction paragraph is a weak opinion statement about conflict minerals.</td>
<td>• Introduction doesn’t have an opinion statement about conflict minerals.</td>
</tr>
<tr>
<td></td>
<td>• Body of letter includes 3 different reasons accompanied by valid examples.</td>
<td>• Closing paragraph restates opinion in a different way asking/suggesting the company to stop using conflict minerals.</td>
<td>• Body of letter includes 3 reasons, some of which are closely related OR not all reasons are accompanied by valid examples.</td>
<td>• Body of letter includes fewer than three reasons accompanied by examples OR there are three different reasons, but no examples.</td>
</tr>
<tr>
<td></td>
<td>• Closing paragraph restates opinion in a different way, demanding the company to stop using conflict minerals.</td>
<td>• Closing paragraph either restates opinion OR asks the company to stop using conflict minerals.</td>
<td></td>
<td>• Closing paragraph restates opinion. It doesn’t ask the company to stop using conflict minerals.</td>
</tr>
<tr>
<td>Grammar &amp; Spelling (Conventions)</td>
<td>Writer makes no errors in grammar or spelling.</td>
<td>Writer makes 1-2 errors in grammar and/or spelling.</td>
<td>Writer makes 3-4 errors in grammar and/or spelling</td>
<td>Writer makes more than 4 errors in grammar and/or spelling.</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-----------------------------------------------</td>
<td>-------------------------------------------------</td>
<td>-------------------------------------------------</td>
<td>-------------------------------------------------</td>
</tr>
</tbody>
</table>
| Format X1                        | Includes all 6:  
  - Heading  
  - Date  
  - Inside Address  
  - Salutation  
  - Body in block paragraphs  
  - Closing | Includes 5 of the following:  
  - Heading  
  - Date  
  - Inside Address  
  - Salutation  
  - Body in block paragraphs  
  - Closing | Includes 4 of the following:  
  - Heading  
  - Date  
  - Inside Address  
  - Salutation  
  - Body in block paragraphs  
  - Closing | Letter includes fewer than 4 of the following:  
  - Heading  
  - Date  
  - Inside Address  
  - Salutation  
  - Body in block paragraphs  
  - Closing |
| Neatness X1                      | Letter is typed, clean, not wrinkled  
  - It was done with pride. | Letter typed, clean, slightly wrinkled.  
  - It was done with care. | Letter is typed and crumpled or slightly stained.  
  - It was done with some care. | Letter is typed and looks like it has been shoved in a pocket or locker.  
  - It looks like it was done in a hurry. |

Total Score: _______ / 44 Points
Opinion Writing

Topic: __________________________
Purpose: __________________________

State your opinion clearly:
__________________________________________________________________________
__________________________________________________________________________

Use linking words and phrases like because, therefore, since, for example, and for instance to connect your opinion and reasons.

Reason One
__________________________________________________________________________
__________________________________________________________________________

Reason Two
__________________________________________________________________________
__________________________________________________________________________

Reason Three
__________________________________________________________________________
__________________________________________________________________________

Concluding Statement:
__________________________________________________________________________
__________________________________________________________________________