The Geography of Diamonds

Digging for Diamonds

This section is meant to be an introduction to the entire unit on diamonds. Students will be asked to discuss their preconceived notions about diamonds (where and how they form, who mines them, what are the effects on the areas they are mined, etc.) the teacher will write the students ideas on the board and save those ideas for later. There will then be a short video shown to introduce students to the concepts around the formation of diamonds.


**What is a diamond and where do they come from**

Using PowerPoint, teach the students the important facts about diamonds. What is a diamond made of? *(The element carbon.)* How are diamonds formed? *(They form under very high pressures deep within the earth.)* How do they come to the surface? *(In rocks released during volcanic eruptions.)* What are some properties of diamonds? *(They are very hard, durable, reflect light well, and refract light into many colors.)*

**Video:** “How Diamonds are Formed: National Geographic” [http://www.youtube.com/watch?v=vHPOp69SO9E](http://www.youtube.com/watch?v=vHPOp69SO9E) (2:56)

**Info:** “How diamonds work” [http://science.howstuffworks.com/environmental/earth/geology/diamond1.htm](http://science.howstuffworks.com/environmental/earth/geology/diamond1.htm)

Bringing You to Botswana

To the class: “What comes to mind when you think of Africa?”
This section of the lesson is introduced with a slide show presentation of the Botswana countryside. It depicts the variety of landscape, people and wildlife in the country, with the country’s national anthem as its backdrop.

Video: “Botswana National Anthem”  http://www.youtube.com/watch?v=dw-95AG5UfU  (1min 35sec)

The class is divided into three groups representing NGO interests, the Mining Company and business interests, as well as Government interests. They are asked to record detail notes relevant to their respective positions. This will guide their perspective on the information to come. Students are given a brief introduction to major features and challenges in the country. A country profile is derived from information from the following sources, and can be as detailed or as sparse as suits the needs of the lesson. A sample summary from these sources is given below.


Country Summary

The teacher describes that Botswana is one of the fastest growing economies in the world. It was considered an under-developed nation before its Independence in 1966, but in the last few decades has established an economy that is comparable to Mexico. “More than four decades of uninterrupted civilian leadership, progressive social policies, and significant capital investment have created one of the most stable economies in Africa. Mineral extraction, principally diamond mining, dominates economic activity, though tourism is a growing sector due to the country’s conservation practices and extensive nature preserves. Botswana has one of the world's highest known rates of HIV/AIDS infection, but also one of Africa's most progressive and comprehensive programs for dealing with the disease.” (from Index Mundi above.)

The country has a population of just over 2 million people in an area that is approximately equivalent in size to the Atlantic Provinces. 70% of this area is arid desert, and desertification is a major environmental issue, both in Botswana and Internationally. The government puts emphasis on quality education and health services, but there is significant urban/rural disparity, and rural peasant farmers are cutting down trees for pasture land with dire consequences to the land. Access to water is a growing concern, particularly for the rural poor of Botswana. Meanwhile, Botswana is home to some of the richest diamond mines on the planet. 40% of the government’s national income is from diamond mining, in its investment in Debswana Diamond Company Ltd (a partnership between the Government of Botswana and DeBeers).
**Jwaneng Mine**

**Introduction to the mine**

- Cover history of the mine (When established)
- Give a geographical location of where the mine is in Botswana (Map Visual)

![Map of Botswana showing Jwaneng Mine](map.jpg)

- Who owns the mine (50% Government 50% Debswana)

**Facts**

- Meaning of Jwaneng (Place of small stones)
- Number of mine workers (over 2100)
- When the mine will run out (2024 at least)

**Videos**

- Setting the stage for Jwaneng Mine (Introductory video)
  
  [https://www.youtube.com/watch?v=dMNoUuLe9dM](https://www.youtube.com/watch?v=dMNoUuLe9dM)

- The criteria of choosing the perfect diamond (Sorting video)
  
  [https://www.youtube.com/watch?v=QzMJONBhn1Y](https://www.youtube.com/watch?v=QzMJONBhn1Y)
Snap Lake Mine

Introduction
I will use this time to introduce how there are two De Beers mines currently operating in Canada with a third being planned. I will also mention how Snap Lake is the first diamond mine De Beers owns outside of Africa. Will discuss how unique the kimberlyte deposit is and how that effects the difficulty of mining the diamonds. Discuss how much money it costs to run and how that affects the local economy.

Snap Lake Mine Water License Controversy
I will introduce the issues surrounding the water license and who and what it affects. Discuss how at the current level (As of 10/23/2014) that the chloride content is already at 2.5x the amount suggested to protect fish and how De Beers wants to double that. Explain that this is an ongoing issue.

Discussion
Ask the students what they think regarding this water license. Is it worth the short term profit gain for the long term environmental effects? Is it ok because it is in a more remote location? Any questions that will allow students to think critically would be a good fit.

Canadian Diamonds
Introduce what the criteria of a Canadian Diamond is and why they are 5-10% more expensive than regular diamonds.
**Victor Mine**

**Introduction**

Ask class if they have heard of Canadian diamond mines, what they may or may not know about them, and if they have ever seen or owned Canadian diamonds. From here I will go on to talk about De Beers, the Canadian/British diamond company who has two mines in Canada. Focus for this section is going to be on the Victor mine in Ontario on the Attawapiskat First Nations land. I will mention when it was formed, how much it cost, and any other details about the mine that are pertinent.

**Attawapiskat First Nations Problems**

At this time I will go into an explanation on the local First Nations peoples that live near the site of the Victor Mine. I will point out that the First Nations people were there first and had made agreements with De Beers to allow construction of the mine, but there have been problems between both peoples in the past over the mine. The Attawapiskat peoples lashed out at De Beers because they felt that none of the profits of the mine were finding their way back to the surrounding communities and went as far as blocking access to the mine to protest the impoverished conditions they live in next to this billion dollar industry. The Attawapiskat Trust will also be discussed, a trust setup by De Beers to give back to the First Nations community and their people. Also mention how De Beers employs 100 members of the Attawapiskat community.

**Mine life span**

Talk about how the mine is only expected to be active for 17 years in total. Tell students to consider the fact that even if it only takes them a few years after the mine shuts down to clean up the site, the environmental repercussions will be long lasting and difficult because of the waste that mines produce.

**Discussion**

In thinking about the problems between De Beers and the Attawapiskat peoples, how would you rectify the various issues that currently exist? What kinds of environmental problems can you see a mine of this size causing? Knowing what you know, would you still purchase diamonds mined in Canada? Why or why not?

https://www.canada.debeersgroup.com/Mining/Victor-Mine/

http://en.wikipedia.org/wiki/Attawapiskat_First_Nation


Activity

Activity

Having been divided into three groups, each is going to represent a different interest perspective currently operating in Botswana and Canada. They are tasked to discuss the information in as much depth as possible and argue their positions against those of the others from the perspectives they are representing.