Lesson Five: Meet Angela / Reaping the Rewards

About this lesson
In this lesson students will meet Angela who lives on Lihir Island, Papua New Guinea which is home to one of the largest gold mines in the world. At the end of this lesson students will have learned about the impact of mining on the environment and think about natural resource depletion.

Learning Objectives
● Understand the issues related to gold mining and resource depletion
● Able to form and articulate an argument for or against gold mining
● Be able to communicate

Resources Required
● Zero Ten Twenty - Angela film clip
● Watching ‘The Children of Rio’ Films handout
● Handout 5.1: Gold Mining, internet
● A3 paper, pencils, coloured markers

Key Concepts
Natural resource
Resource depletion

Lesson plan

5 - 10 minutes Ignite students’ thinking about resource depletion by asking them to call out the natural resources they know (fossil fuels, minerals). Then hold the small quiz with pupils about gold on fact Handout 5.1.

20 minutes Hand out the worksheet ‘Meet the children of Rio’ before watching the clip so students can make notes. After watching the clip, discuss as a class what they thought about the film. What did they like, what didn’t they like? Did they learn something new? What impact does a mine have on the environment; and on a community?

30 minutes In lesson 2, students thought about balancing the economic needs with environmental concerns. In this lesson, students will take this further by exploring the pros and cons of gold mining on Lihir Island, Papua New Guinea. Students can use the information on gold mining (Handout 5.1) to start their research. Divide your class into pairs; half the pairs will be looking at pros of mining and the other half at cons. Each group will create a poster outlining facts and their argument. If you have time, have pairs present their posters to the whole class.

5 minutes Hot seat plenary – ask each student to come up with two questions on what they have learnt in this lesson. Then ask students to pair up and ask each other the questions. Feed key points back to the whole class if you have time.

Extension Activity
If you want to take learning about the social impact of mining further, you could encourage students to think about human slavery in mining. There is a great interactive and visual survey that students could complete that will tell them how many slaves are working for them (incl. in mining). Follow this link: http://slaveryfootprint.org
### Handout: Watching - The Children of Rio films

Handout copies to each student before watching ‘The Children of Rio’ the films so they can record information whilst watching.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Who is the child in the film? Note down 3 facts about their life / way of life (e.g. about their family, home, country, means of income)</td>
<td>-</td>
</tr>
<tr>
<td>2. What are the main issues / challenges the child in the film and his / her family and community face?</td>
<td></td>
</tr>
<tr>
<td>3. What key events happen throughout the 20 years of the child’s life? What changes happen?</td>
<td></td>
</tr>
<tr>
<td>4. How do you feel after watching the clip about this child’s life?</td>
<td></td>
</tr>
</tbody>
</table>
Below are five quick questions to ignite your students’ thinking about why gold (and other natural resources) are mined and their value.

**QUESTION 1:** Where is most of the world’s gold mined?
**ANSWER:** Africa - 2/3 of all gold is mined here.

**QUESTION 2:** Where is the world’s deepest mine?
**ANSWER:** South Africa - the TauTona mine in Carltonville operates at 3.5km deep.

**QUESTION 3:** How much gold is mined every year?
**ANSWER:** Approximately 2500 tonnes.

**QUESTION 4:** What is the average price of a gram of gold?
**ANSWER:** About £15, compared to silver which is just under £1.

**QUESTION 5:** Can you eat gold?
**ANSWER:** Yes! In some societies eating gold is common, as the metal has no negative effect on the human body. In fact, this is the reason gold can be used for tooth fillings.

**5.1.2 - The effects of mining in Lihir, Papua New Guinea**

Facts on Lihir Island:
- Mining started on Lihir Island in the 1980s and the mines were found to have a lot more gold than originally thought.
- The running of the gold mine on Lihir Island has had far reaching impact on the island and the life of its inhabitants - some of these positive and others negative.

Mining on Lihir Island

- Only 2% of the land on Lihir Island is under farmland.
- Average income per year £1,872, but as wealth is unevenly distributed 80% of the population live below the line of poverty - 70%.
- 85% of the population are indigenous peoples and belong to the Kainantu tribe.
- Almost all of the island’s resources are used as raw materials and most of the island is deforested.
- One of the world’s highest mortality rates and lowest life expectancies (66 years). Over 350 indigenous languages are spoken.
- The Kainantu tribe is a group of islanders in the South Pacific Ocean with a population of 6.5 million.

Facts on Papua New Guinea:
- Only 2% of the land on Lihir Island is under farmland.
- Average income per year £1,872, but as wealth is unevenly distributed 80% of the population live below the line of poverty - 70%.
- 85% of the population are indigenous peoples and belong to the Kainantu tribe.
- Almost all of the island’s resources are used as raw materials and most of the island is deforested.
- One of the world’s highest mortality rates and lowest life expectancies (66 years). Over 350 indigenous languages are spoken.
- The Kainantu tribe is a group of islanders in the South Pacific Ocean with a population of 6.5 million.

**5.2 - The effects of mining in Lihir, Papua New Guinea**