Teachers' Notes: Smoke : A crisis in Northern Thailand

Background information

This worksheet is designed to accompany the documentary film *Smoke: A crisis in Northern Thailand* the version on the main site http://smokethedocumentary.com/ has Thai subtitles if you would prefer a version without Thai subtitles then use this link https://vimeo.com/152660266 and the password: pollution The documentary discusses the annual problem of air pollution in Northern Thailand focusing on the impacts it has on the health of the local population, the environment, and the economy, as well as looking at its causes and offering a possible solution to one contributing factor, the burning of agricultural waste. The documentary consists mainly of interviews with experts and residents and is bilingual, English and Thai. This worksheet deals mainly with the English sections of the film and is suitable for students at an intermediate level of English and above.

Language level	Intermediate + / B1+
Time	90 mins (depending on level) Follow on activity 30 mins
Topics	Health / Environment / Agriculture / Appropriate technology Problem - solution Sequencing of a process
Skills focus	Listening and speaking Listening for general understanding Listening for details Listening to a variety of accents Predicting Giving opinions Asking and answering questions Critical thinking

Lead in

Before watching the documentary put students in pairs to discuss environmental problems in Northern Thailand. Don't tell them what the documentary is about. Monitor students' discussions and encourage them to justify / explain their answers. If you have time get two pairs to join together to compare their ideas, or get some whole class feedback. If you are short of time ask students to discuss question 1 and 2 other questions of their choice. The aim of this activity is to warm students up for the documentary, the specific answers they give at this stage are not so important.

Section 1 (0.00 - 0.33)

1) Watch the beginning of a documentary and complete the heading at the top of the page.

2) What do you see in the lead in to the video?

Fires, farmers, ash, fields, mountains, deforestation, haze, smog, traffic

Prediction 1

Get students in pairs to predict what the documentary will be about based on what they have seen and what they know about the smoke problem. This activity involves prediction and selection (of three things) both of which are critical thinking skills. If necessary explain to students it does not matter if they are right or wrong in their predictions, but that predicting what might be included will help them understand the documentary as they are activating their background knowledge before watching. Ideally they will predict 'causes', 'effects' and ' 'solutions'. N.B. The feedback on their predictions will happen after they have watch the documentary.

In pairs discuss what you think the documentary will be about. Then make a list of three things you think will be included in the video.

e.g. The main causes of air pollution in Northern Thailand.

Section 2 (0.33 - 1.54)

Get students to read the contents of the table before they watch so that they can do the matching task while watching the video. After watching ask students to compare their answers in pairs before eliciting / checking the correct answers.

Watch the video and match the speakers to what they say.

1	Dr. Michael Shafer	**D**	A	"You can't see the countryside. The countryside is dry and horrible."
2	Dr. Wolfram Spreer	**F**	B	"... air pollution is the worst environmental pollution because we have no choice. We have to breathe."
3	Ricky Ward	**A**	C	"The particles are so small they embed themselves in our lungs."
4	Dr. Tippawan Prapamontol	**B**	D	"The burning season is terrible for the health of everyone it touches."
5	Sakada Darawan	**C**	E	"... if we look at a population in the millions and this risk is increased for everyone."
6	Dr. Rungsrit Kanjanavanit	**E**	F	"... anybody who is susceptible like sick people, children, elderly people. They have problems."

Section 3 (2.58 - 3.32)

1) What did Alice and Am both notice? Health problems in their children.

2) What did they do? Leave Chiang Mai.

Section 4 (6.50 - 7.55)

Watch the video and match the speakers to what they say.

1	Dr. Peter Hoare	**B**	A	"It does become the most polluted place on earth."
2	Dr. Rungsrit Kanjanavanit	**E**	B	"Then suddenly you break through that and you're in bright sunshine."
3	Gordon Hirst	**A**	C	"You don't see the blue skies for six weeks..."
4	Leslie Junlakan	**C**	D	"It has never been as bad as last year."
5	Keegan Kennedy	**F**	E	"You can see that it's covered in a layer of grey, like a blanket covering our city."
6	Dr. Wolfram Spreer	**D**	F	"... everybody's coughing because they're not used to the smoke."

Section 5 (8.40 - 12.10)

This section includes a lot of information so encourage students to read the questions before watching and then listen for this specific information, rather than trying to understand everything. You can pause part of the way through to check understanding and answers.

1) For how long has the burning season been a problem? 35-50 years

2) Why has it become worse? Intensification of / more intensive agriculture. More agricultural waste.

3) Does rice faming cause air pollution? Yes

4) Which crops have increased in recent years? Maize / corn

5) What is 'contract farming'? Farmers get the whole package of agricultural inputs, you produce and the middle man comes to buy it.

6) What does Dr. Spreer say we need to focus on? a The solutions

Prediction 2

In pairs discuss what the main problems are and what the possible solutions might be.

Problems	Solutions
e.g. Burning agricultural waste.	Change farming methods.
Deforestation to grow corn.	Protect the forests. Encourage farmers to grow other more sustainable crops.

Section 6 (12.27 - 13.50)

1) What is the Biochar kiln made from? An oil barrel / drum.

2) What is the purpose of the chimney? To provide a second burning (of the gases) and therefore reduce pollution.

Section 7 (14.15 - 17.46)

Before students watch this section ask them to look a the steps of the biochar process and guess the order in which they happen putting their predictions in column 1. If necessary give them step 1. Then let them watch the video and check their answers writing the correct answers in column two. Doing the prediction first will help them when they watch and will also hopefully illustrate to students that it's possible to predict the stages of a process from our own knowledge thus making the listening task easier.

Before you watch read the statements and predict the order of the steps of the biochar kiln process. Put the numbers 1 - 8 in the first column. Then watch and check your answers.

4	A	Remove the chimney.
2	B	Put the chimney on the kiln.
7	C	Leave the char to rest.
5	D	Put out the fire.
3	E	Light the fire and burn the agricultural waste.
6	F	Put the char in the ground and mix it with manure.
1	G	Fill the kiln with agricultural waste.
8	H	Mix the char with soil or compost and use it.

Section 8 (17.47 - 22.04)

1) At what temperature do the gases burn? 400- 800 degrees

2) What remains after the process? A carbon rich material.

3) Why is the biochar kiln a good solution? It's a suitable size for the farms in the hills in Northern Thailand. It's also simple technology. (Appropriate technology)

4) What might the short-term solution be? Using the biochar kiln. Framers sell their waste (to entrepreneurs) , it's processed on the farms and then taken away and sold.

5) What are the disadvantages of growing corn? Needs a lot of land, exposes land to the sun and rain. It's a crop designed to destroy delicate soil on steep slopes.

Section 9 (23.46 - 24.37)

1) What does Dr. Michael Shafer mention as the 'costs' of the burning season? Public health costs and lost tourism dollars. The real costs of the burning season are immense.

2) Does Dr. Wolfram Spreer believe that there is a single solution? No

3) What does he say about artificial rain? A technique to adapt to the problem rather than to mitigate it.

Section 10 (25.28 - 26.00)

1) Is Rungsrit Kanjanavanit optimistic about solving this problem? Why? / Why not? Yes because normal people can build understanding and create change.

Prediction check

The second prediction question aims to highlight to students that they should activate everything they know when brainstorming / predicting. For prediction task 1 they may have discussed something but not selected it in their top three, that's okay, and they may think about the process they used in making their selection.

1) In pairs look back at your predictions 1 and 2. Did you predict correctly?

2) Was there anything you didn't write down in your predictions that you knew before watching the documentary?

Reflection

Get students to work in groups of 3 or 4 and discuss the questions. While they are doing this monitor them. After get some feedback from the class. It might be a good idea to focus on question 6 in the feedback.

Talk in a small group and discuss your reactions to the documentary.

1) What did you think of the documentary? *I thought it was ....*

2) Did anything in the documentary surprise you? *The fact that ..... surprised me.*

3) Is there anything else you'd like to know about this topic that wasn't covered in the documentary? *I'd like to know....*

4) Who do you think should watch the documentary? Why? *I think .... , because ...*

5) What do you think ordinary people can do to help solve this problem? *In my opinion ...*

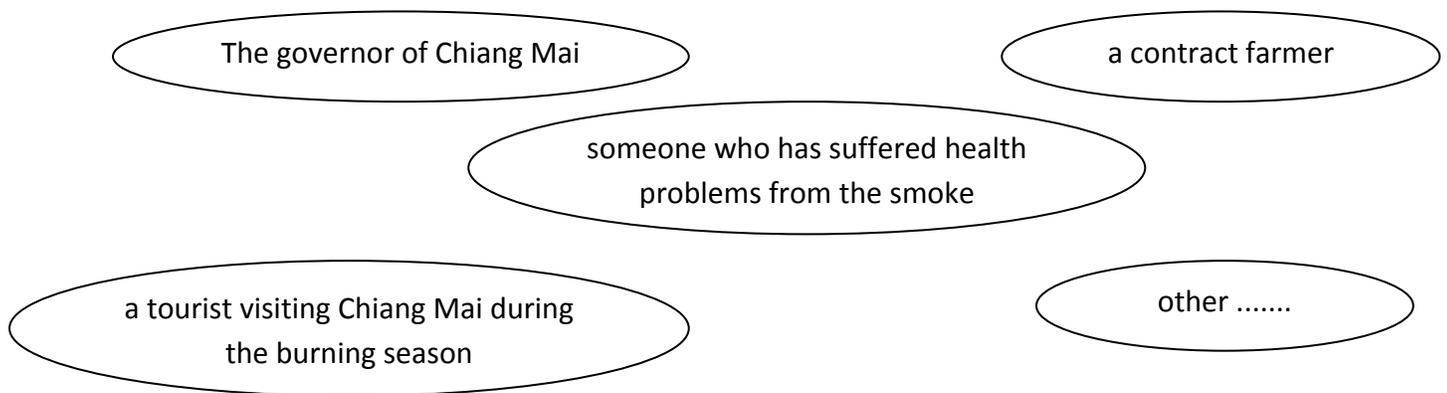6) What will you do to help solve this problem? *I will.... How about you?*

Follow on task

This documentary is a work in progress so it might be a nice follow up to get students to think of who could be interviewed in the future and to create questions to use in an interview. Allow students to choose someone they think should be interviewed and write appropriate interview questions for that person. Then students can role-play the interviews in pairs.

Other possible follow up activities could be writing a letter to The Governor of Chiang Mai offering ideas to help solve the smoke problem, or making posters to be put up in villages / schools etc to help inform people of the problem and how they can safeguard their health during the burning season.

In small groups imagine that you are helping with the production of a follow up documentary on this topic.

1) Think of a person you would like to interview.

The governor of Chiang Mai

a contract farmer

someone who has suffered health problems from the smoke

a tourist visiting Chiang Mai during the burning season

other ....

2) Write a list of questions that you would like to ask them in the interview. Make the questions relevant to the person you have chosen.

3) Work with a students from another group. Exchange questions and read your partners' questions and imagine you are the person who will be interviewed and think of answers to them. Ask and answer each others' questions.

Video link and more information: http://smokethedocumentary.com/

https://www.facebook.com/smokethedocumentary