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Unit Title: Pollution

Topic: What is Causing Global Warming?

Subject area : Science and cross-curricular: technology, chemistry, geography, ecology

Language: English

Language Level **B1** / **B2**

Target students: Secondary school (ages 15-18)

Time: 2 hour

Aims:

- Students will identify the factors that have influenced global climate in the past.
- Students will review the greenhouse effect and its influence on climate, identify major greenhouse gases and their atmospheric percentages, and understand why carbon dioxide is considered the greenhouse gas most responsible for contemporary global warming.
- Students will identify natural and industrial sources of atmospheric carbon dioxide and understand the ways in which it cycles through systems.
- Students will define and identify different types of fossil fuels, industrial sources of carbon dioxide and changes in carbon dioxide concentrations since the industry era.
- Students will analyze and evaluate conflicting information about CO₂ and global warming.
- Students will learn strategies for evaluating scientific claims made in the media.

Final product: PPT presentation about Global Warming

Methodology, classroom activities:

- teacher's speech
- group work
- pairwork
- individual activities
- internet research
- multimedia





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<p>Lead the decoding of the video using the prompts in the Teacher Guide. Video clips on DVD or YouTube Channel: http://www.youtube.com/projectlooksharp</p> <p>CO2: They Call it Pollution, We Call It Life, : http://www.ithaca.edu/looksharp/Books_Global_Warming/Lesson_4/L4_They_Call_it_Pollution.mov</p> <p>Show the 5 min video excerpt from An Inconvenient Truth http://www.ithaca.edu/looksharp/Books_Global_Warming/Lesson_4/L4_Inconvenient_Truth.mov</p>	<p>Group work</p> <p>Conversation</p> <p>Internet</p>	<p>Direct observation</p>
<p>Feedback</p> <p>Discussion: strong/ weak points of the lesson</p> <p>Students complete the Student Worksheet Annex 1</p>		<p>Review the worksheet using the suggested answers in</p>





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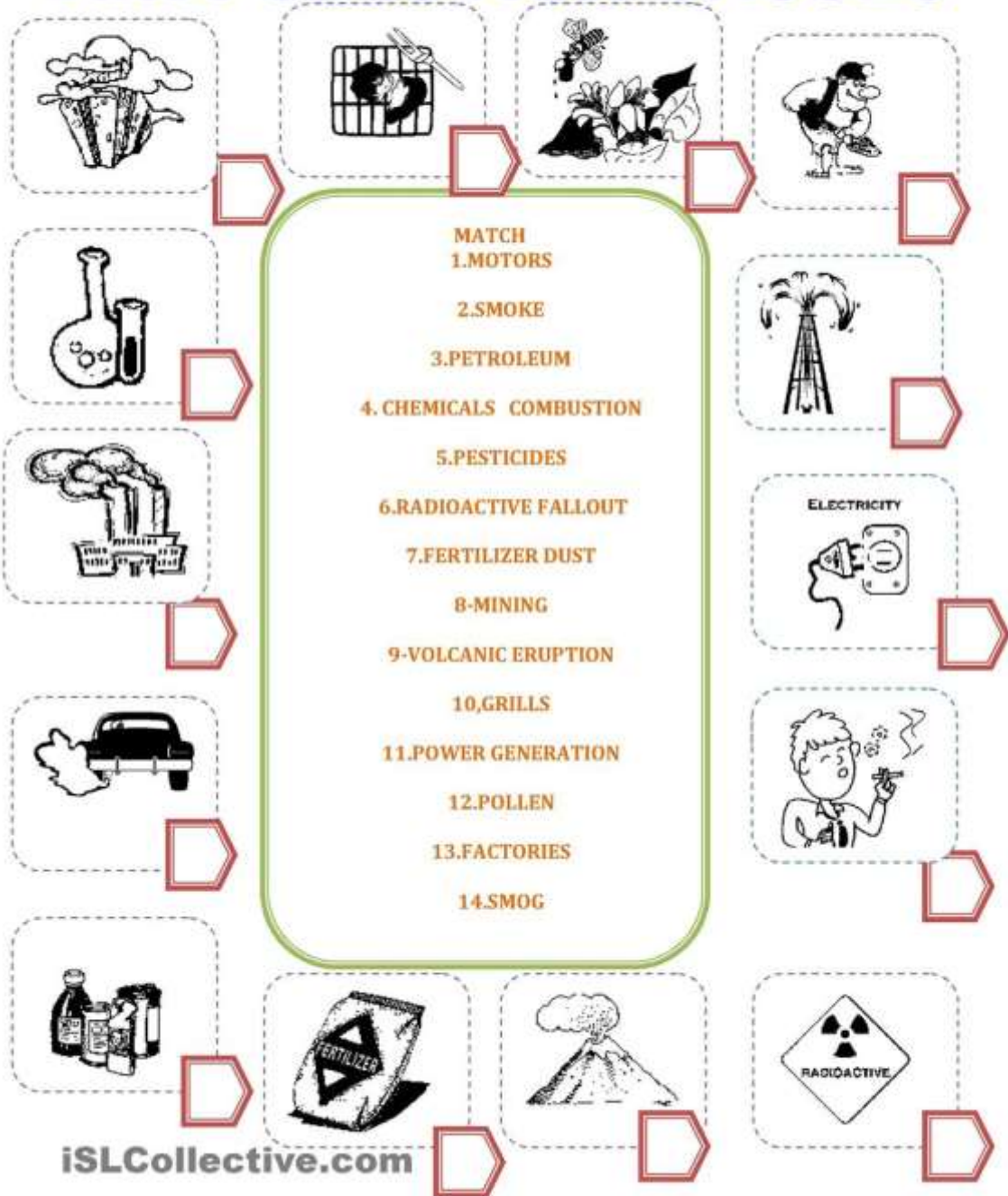


		the Teacher Guide.
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ANNEX 1

AIR POLLUTION CAUSES





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Unit Title: Pollution

Topic: Causes of Pollution

Subject area : Science and cross-curricular: technology, chemistry, geography, ecology

Language: English

Language Level **B1** / **B2**

Target students: Secondary school (ages 15-18)

Time: 2 hours

Aims:

- Identify and discuss different kinds of pollution.
- Identify and discuss sources of pollution.
- Discuss and explain why it is important to keep the environment free of pollution.

Final product: PPT presentation about“Let’s Stop Pollution”,

Methodology, classroom activities: (some examples)

- conversation
- group work
- pairwork
- individual activities
- warm up
- brainstorming

Assessment tools : worksheets, group portfolios, self-evaluation paper

Documents and materials worksheets, flipchart, coloured pencils

Worksheet Annex 2

I. Choose the suitable word:

1) A _____ is an ecological or environmental area that is inhabited by a particular species of animal, plant, or other type of organism.

a) moisture; b) habitat; c) stream; d) butterfly

2) In a street, park, or public building, we put rubbish in a _____.

a) litter bin; b) hole; c) river; d) washing machine

3) Ecology is the _____ of Biology dealing with the relations and interactions between organisms and their environment.

a) leaf; b) universe; c) surface; d) branch

4) The action of making land, water, air, etc., dirty and not safe or suitable to use is called _____.

a) review; b) pollution; c) exposure; d) spreading

5) Let's keep the _____ and make new plants grow.

a) seeds; b) gloves; c) stems; d) arrows.

6) We know that _____ studies the composition, structure, properties and change of matter.

a) History; b) Drawing; c) Chemistry; d) Music.

(6 x 5 points = 30 points)

II. True or False?

1) Electrons are larger than molecules.

2) The chemical make up food often changes when you cook it. _____

3) Filtration separates mixtures based upon their particle size.

4) Conductors have low resistance.

5) Water is an example of a chemical element.

6) The study of plants is known as botany.

(6 x 5 points = 30 points)

III. Which word is different? Underline it:

- 1) aeroplane, bird, rocket, balloon, cat, jet
- 2) onion, celery, lettuce, pineapple, turnip, leek
- 3) elephant, panda, pig, tiger, goat, sheep, snake
- 4) nose, badger, mouse, lips, neck, finger, ears, legs
- 5) sky, forest, lake, sea, factory, sun, cloud, moon
- 6) ham, bread, beer, sausage, chicken, cake, cabbage
- 7) play, listen, see, hear, feel, look, taste, smell, touch
- 8) apricot, plum, banana, orange, lemon, carrot, peach
- 9) shoe, dress, trousers, hat, scarf, socks, jacket, bag
- 10) blue, yellow, rose, purple, red, pink, green, black

(10 x 2 points = 20 points)

IV. Give the antonyms of these verbs:



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1) to waste / _____;

2) to win / _____;

3) to empty / _____;

4) to deflate/ _____;

5) to request/ _____;

(5 x 2 points = 10 points)

10 granted point

Maximum score: 100 points

Promotion score of assessment: 70-100 points

SCORE

100

Unit Title:Pollution

Topic: Pollution Solutions

Subject area : Science and cross-curricular: technology, chemistry, geography, ecology

Language: English

Language Level **B1** / **B2**

Target students: Secondary school (ages 15-18)

Time: 2 hours

Aims:

Students will understand the following:





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-The threat to water ecosystems is a complex problem because many factors contribute to their pollution and destruction.

-The following factors all play major roles in the pollution and destruction of water ecosystems: PCBs, DDT, methylmercury chloride, sewer sludge, thermal effluents, radioactive wastes, destruction of marshlands, and beach erosion.

-Methods to combat the above factors exist.

Final product: PPT presentation about Pollution Solutions

Methodology, classroom activities:

- conversation, brainstorming
- group work
- individual activities
- internet research
- warm up

Assessment tools: worksheets

Documents and materials:

- dictionary
- worksheets
- movies with Pollution Solutions
- PPT presentation with Pollution Solutions
- Printer, computer, Internet connection
- Whiteboard, flipchart , paper
- worksheets, flipchart, crayons, internet



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Description of activities

Students work	Methods and resources	Assessment
<p>Ask students to name some water ecosystems. (They might mention oceans, rivers, ponds, lakes, marshlands.)</p>	<p>Conversation</p>	<p>Discussions and answer to all questions</p>
<p>Now ask them to mention any factors they know of that contribute to the</p>	<p>Conversation</p>	



Students work	Methods and resources	Assessment
<p>pollution and destruction of water ecosystems. List their suggestions on the chalkboard, including the following: PCBs, DDT, methylmercury chloride, sewer sludge, thermal effluents, radioactive wastes, destruction of marshlands, and beach erosion.</p>	<p>Pair work</p>	
<p>Divide your class into groups, and have each group research one of the factors you have listed. Groups should focus their research on how their factor affects water ecosystems, particularly those in your area, if applicable, and the methods that are being employed to counter it.</p>	<p>Conversation Pair work</p>	<p>Discussions and answer to the questions</p>
<p>When their research is complete, each group should choose one water ecosystem that has been affected by the factor they have been assigned and prepare an environmental-impact statement about it. Each statement should include four elements:</p> <ul style="list-style-type: none"> • a description of the current environmental status of the ecosystem • a description of the way or ways in which the factor affects the ecosystem • a description of the existing methods that are being used to combat the factor • suggestions for future methods of combating the factor. 	<p>Conversation</p>	

Students work	Methods and resources	Assessment
<p>When the statements are complete, invite groups to share their findings with the class.</p> <ul style="list-style-type: none"> You can evaluate your students on their assignments using the following three-point rubric: <p>Three points: complete description of the current status of the ecosystem, accurate description of the way or ways in which the factor affects the ecosystem, clear description of methods being used to combat the factor, reasonable suggestions for future methods</p> <p>Two points: adequate description of the current status of the ecosystem, acceptable description of the way or ways in which the factor affects the ecosystem, vague description of methods being used to combat the factor, unrealistic suggestions for future methods</p>	<p>Conversation</p> <p>Description</p>	



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Students work	Methods and resources	Assessment
<p>One point: vague description of the current status of the ecosystem, unsatisfactory description of the way or ways in which the factor affects the ecosystem, inadequate description of methods being used to combat the factor, no suggestions for future methods</p> <p>You can ask your students to contribute to the assessment rubric by determining how many suggestions for future methods should be included.</p> <p>Feedback</p> <p>Discussion: strong/ weak points of the lesson</p> <p>Students complete the Student Worksheet Annex 3</p>	<p>Description</p>	<p>Worksheet Annex 3</p>



Worksheet Annex 3

Discover Pollution

Read the sentences below. Visit our Easy Geography for Kids page [All about Pollution](#) to find the missing words.
Write them in the empty spaces and find these hidden words in the puzzle!

[Words might be hidden horizontally, vertically and perhaps even back to front...!]

1. Today, _____ is a bigger problem than ever.
2. _____ from car fumes and factory smoke can cover cities, making it hard to breathe.
3. When _____ rigs in the ocean hit rocks, they spill oil into the sea. The oil _____ sea animals and pollutes beaches.
4. Raw _____ runs into the rivers and seas. This sewage can spread disease. It also causes _____ to grow in the water. The algae use up the _____ in the water so other aquatic plants and animals die.
5. _____ is useful in many ways, but it doesn't break down or biodegrade. Anything made with plastic piles up in landfills or pollutes the ocean, where it kills _____.
6. Plastic can be _____ — made into other things.
7. _____ from cooking fires filled the air. The villages and cities became polluted.
8. This waste is sometimes dumped into rivers, where it pollutes the _____ and kills animals and plants. The _____ water can also hurt humans.

C	G	O	D	S	G	O	O	D	A	L	G	A	E	U	S
I	V	B	S	P	O	L	L	U	T	I	O	N	P	S	E
T	Q	S	Z	X	M	E	R	T	Y	O	X	Y	G	E	N
S	K	I	L	L	S	F	E	G	A	W	E	S	C	X	B
A	E	R	E	T	A	W	E	F	I	L	D	L	I	W	A
L	R	E	C	Y	C	L	E	D	K	O	F	D	X	A	I
P	S	W	E	R	T	A	N	M	A	I	G	X	O	I	L
W	E	K	O	M	S	K	F	K	U	Q	H	Z	T	N	N