

Ontario Clean Air Alliance & ecoMentors lesson plan www.cleanair.web.net / www.ecomentors.ca		
Title: Air Pollution pt. 1 – What’s in the air?	Grade Level(s): 3-4	Time/Date:
School:	Teacher:	
Directions to school, class:		
Contact Info:		
Ontario Curriculum Connection: Grade 3 – Canada and World Connections: Urban and Rural Communities, Grade 4 – Earth and Space Systems: Rocks, Minerals and Erosion/Energy and Control: Light and Sound Energy		
Vocabulary: Words & Concepts your class may be learning, look these up yourself too!		
Air Pollution - the notion of "bad things" floating in the air that affect ecosystems; perhaps gained through a discussion of "what is air?" and "what is pollution?"		
Electricity - they should be able to clearly define what it is, where it comes from and where it is used		
Conservation - understanding that reducing energy usage is the easiest way to reduce air pollution		
Materials and Equipment: List these before and while you plan and revise so you’re prepared.		
30 Sheets of paper – you can find some used paper and use the blank side for the activity Sticky tack or tape.		
What is your class accomplishing?: Learning & Activity Goals, Objectives		
<ol style="list-style-type: none"> 1. Recognize air pollution and its link to coal burning 2. Identify renewable and sustainable energy sources 3. Identify links between coal-burning and environmental and personal health that students can take back to their homes and communities. 		

PROCEDURE

The Spark: Introductions, Demonstrations, Show and Tell, Topic Intro (Break the ice!) ~5-10min

This exercise gets students warmed up, assesses how much they know about air pollution and generates ideas for the next activity. You’ll be writing down things they know about air pollution.

Hey everyone, we are from the Ontario Clean Air Alliance. We’re here to talk to you today about air pollution and coal burning. Does anyone know where air pollution comes from or what it does to people and the things around us? Tell us your name and something you know about air pollution. Have one person interacting with students and the other writing answers on pieces of paper and sticking them up on the board. Try to write down responses in a few simple words, and add a drawing in every now and then. Stick the pieces of paper to a wall or the blackboard.

Brainstorming, Getting ideas, Connecting ideas (assess their knowledge!) ~10-20min

This activity helps students think about the ideas they brainstormed earlier. Is their answer a cause or an effect of air pollution? You’ll be organizing the pieces of paper in to causes and effects.

Wow! Look at all the things you already know about air pollution. I think we should try to put them in groups so we can find out more about air pollution. On the blackboard, write the large heading – ‘AIR POLLUTION’ (ask the students to help you spell this). Below this heading write two other headings ‘CAUSES – WHERE DOES IT COME FROM?’ and ‘EFFECTS – WHAT DOES IT DO?’ (give yourself room as you will be sticking lots of paper underneath the headings). Ask the students to tell you where to place the pieces of paper. At the end of this activity you should have all the ideas under the two headings.

Activity, Game, Exercise, Debate, Puzzles, Problem Solving, Role Play ~10-30mins

Solutions – This exercise will help the students find solutions to reduce air pollution.

Air pollution comes from many places. How can we stop air pollution? Have the students look at the column ‘CAUSES – WHERE DOES IT COME FROM’ and ask them to find solutions for each cause of air pollution. Write down these solutions on the board.

Activity, Game, Exercise, Debate, Puzzles, Problem Solving, Role Play(Pt. II or Cont...) ~10-30mins

Some quick trivia on Coal and Air Pollution. This exercise will test student's knowledge of air pollution caused by coal burning and will give students new knowledge. Ask the question, give the three possible answers and then ask students to raise their hands to the answer they think is correct.

1. What is coal made of? 1. Rock and stone. **2. Wood and plants.** 3. Animal bones.
2. What happened to the wood and plants to make it coal?
 1. **They were buried underground and squashed.**
 2. They were heated with oil by people
 3. A volcano came and turned them into rock.
3. How does coal produce energy?
 1. You can plug wires in to the coal and they go into a battery
 2. Coal is boiled in water and makes gas for cars
 - 3. Coal is burned, heats up water and the steam turns big wheels called turbines.**
4. **Coal produces the most air pollution of any fuel.** Coal produces the least air pollution of any fuel
5. Air pollution hurts these people the worst. 1. Adults, 2. Clowns, **3. Young people**

Activity, Game, Exercise, Debate, Puzzles, Problem Solving, Role Play(Pt. II or Cont...) ~10-30mins

Environmental and personal health – This discussion will help students make the connection between coal burning and environmental/personal health

Do you know anyone with asthma? When do they have trouble breathing? What would air pollution do to someone with asthma? What would air pollution do to your health?

Do you ever have trouble breathing outside?

What do you think happens if you breathe in the smoke from burning coal?

Do ever see smog in the sky? Do you see statues turn green? Why would statues turn green? If the rain turns statues green, what would it do to us?

Activity, Game, Exercise, Debate, Puzzles, Problem Solving, Role Play(Pt. II or Cont...) ~10-30mins

Nanticoke – This activity introduces the Nanticoke Generating Station's impact on the environment.

Does anyone know where Nanticoke is? It is a small town South of Toronto.

Does anyone know what is in Nanticoke? A coal burning plant-Canada's No. 1 source of air pollution.

Does anyone know who Ontario's premiere is? Dalton McGuinty

Would anyone like send a letter to him to ask him to stop burning coal?

At this point you can hand out the Nanticoke pamphlets and ask students to take them home to their parents to sign and have them take them back to you.

Contingency, Plan B, extra game or activity (Back up plan) ~5-10mins

Ask students to draw a picture illustrating the causes, effects and solutions around air pollution.

Tell students to include the following sentences at the bottom of their picture

1. Air pollution is comes from ____.
2. Air pollution can ____
3. We can stop air pollution by _____.

Presentation of Findings ~5-15mins

Ask students to present/share their illustrations.

Review, Conclusion and steps towards continued action ~5-10mins

Remind students to take home the Nanticoke pamphlet to their parents to fill out and to bring back to the class before your next visit. Ask them to ask their parents the following questions.

What can we do as a family to reduce air pollution? How can we have fun doing it?

How can we reduce air pollution in our neighbourhood and city?

References

Ontario Clean Air Alliance - <http://www.cleanair.web.net/>