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[AQA Environmental Management Full Year Curriculum](#)

[AQA Module Science AS Full Year Notes BUNDLE](#)

1

UNIT #7

Managing the atmosphere

- 7.1 Acid deposition
- 7.2 Photochemical smog
- 7.3 Managing air pollution
- 7.4 Ozone depletion

2

7.1 Acid deposition

Acid deposition = a mix of air pollutants that deposit from the atmosphere as acidic wet deposition (with a pH < 5.6) or acidic dry deposition.

Describe the two types of acid deposition

WET DEPOSITION

- snow, rain, hail, fog
- Sulfuric acid and nitric acid (secondary pollutants)
- Fall far from source.

DRY DEPOSITION

- dust and gases
- Sulfur dioxide and nitrogen oxide (primary pollutants);
- Fall close to source.

3

Outline the formation of acid deposition

- Fossil fuels contain sulfur compounds
- combustion of fossil fuels releases sulfur dioxide gas
- nitrogen from the atmosphere reacts with oxygen in the high temperatures of vehicle engines to form nitrogen monoxide gas
- nitrogen monoxide gas is released into the atmosphere in vehicle emissions
- Sulfur dioxide gas reacts with water and oxygen in the atmosphere to form sulfuric acid;
- nitrogen monoxide gas reacts with oxygen and water in the atmosphere to form nitric acid

4

Acid Rain Pathway

- Nitrogen oxide and Sulfur dioxide are released in the atmosphere.
- The pollutants react with water and oxygen in the atmosphere and travel long distances.
- The acid particles then fall to the earth as wet and dry deposition.
- Acid deposition causes harmful effects on soil, forests, streams, and lakes.

5

Impacts of acid deposition

- kills larva of fish, mollusks, amphibians
- negatively affecting organisms relying on these for food.
- effects of morphology of fish gills

Critical pH Levels for Aquatic Organisms

Organism	Critical pH
Snails	6
Clams	6
Bas	5.5
Crayfish	5.5
Mayfly	5.5
Trout	5
Salamanders	5
Perch	4.5
Frogs	4

6

Impacts of acid deposition

Vegetation and crops

- defoliation (crops & trees)
- damage chloroplast, reducing photosynthesis
- changes in soil chemistry - reduce plant productivity
- reduced crop yield

7

Impacts of acid deposition

Stone and brick buildings

- erodes stone buildings, corrodes cars
- enhanced chemical weathering
- erases writing on tombstones, statue's facial features
- damages roads

8

Acid Deposition prevention strategies

- Use renewable energy sources: wind power, solar panels, geothermal, hydropower.

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Acid Deposition prevention strategies

- Increase public transportation and limit the number of vehicles on the roads, especially in urban areas.
- Drive less, walk or bike or carpool.

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Acid Deposition prevention strategies

Legislation is also very important.

- The Clean Air Act (1990) established an emissions trading program for sulfur dioxide;
- The industrial smoke stacks should have scrubbers: chemically convert or physically remove pollutants before they leave the smoke stack.
- Cars have cleaner burning engines and catalytic converters;
- Permit trading programs and clean coal technology;

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7.2 Photochemical smog

Photochemical smog = a mixture of air pollutants and particulates, including ground level ozone, that is formed when oxides of nitrogen and volatile organic compounds (VOCs) react in the presence of sunlight.

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Smog in Los Angeles, California.

Credit: EPA

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Impacts of photochemical smog

- eye and respiratory irritation;
- Lung damage/cancer
- trigger asthma attacks because the smog causes increased sensitivity to allergens
- decreased crop yields
- deterioration of plastics and rubber
- Reduce visibility - impact on transportation

Smog over St. Petersburg, Russia.

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Review Q's

- List and describe two causes of acid deposition. [4]
- Compare and dry deposition to wet deposition. [4]
- List and describe three effects of acid deposition. [6]
- List and describe two management strategies to reduce the effects of acid rain. [4]
- Describe the causes of photochemical smog. [4]
- Explain what effects photochemical smog has on human health and the environment. [4]

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7.3 Managing air pollution

- reduced use of fossil fuels
- reducing emissions of
 - sulfur dioxide by flue gas desulfurization (scrubbers) and fuel desulfurization
 - oxides of nitrogen by catalytic converters
 - particulates using electrostatic precipitators
 - volatile organic compounds (VOCs)- safe usage, storage and disposal of household products.
- restricting vehicle use in urban areas
- legislation
 - Clean Air Act
 - Polluter pays principle

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Scrubbers used to scrub sulfur to remove sulfur.

Used to remove particulates

Electrostatic precipitation - Uses gases without acidic particles

7.4 Ozone depletion

Outline how ozone depletion occurs.

- chlorofluorocarbons (CFCs) from aerosols and refrigerants are unreactive compounds and are not broken down in the troposphere
- CFCs move into the stratosphere and break down in the presence of ultraviolet light to release a chlorine atom
- rapid reactions between chlorine atoms and ozone breaks down ozone (O3) to oxygen (O2), causing ozone depletion

Ozone Destruction Cycle in Upper Stratosphere

Ozone concentration is measured using Dobson Unit. Area with less than 100 DU is an ozone hole.

Ozone depletion has been greatest over Antarctica. Why?

- Temperatures low enough to form polar stratospheric clouds (PSCs)
- Stratospheric air in the polar regions is relatively isolated from other stratospheric regions for long periods in the winter months.

PPT/NOTES Presentation

All slides are editable.

Bell Ringers for Unit 6 Managing

water supplies

What's included?

This resource includes the following:

➤ 8 unique bell ringer prompts including:

- True/False questions
- Matching questions
- Fill in the blanks
- AICE style questions
- Data analysis questions.
- One self-evaluation
- **Answer Key**



➤ 100% editable

➤ Zero prep. Just print and distribute to students.

Name: _____ AICE Environmental Management AS

7. Managing the Atmosphere

Day 1 Bellringer

Identify if the following statements are true or false:

1. Acid deposition includes both acidic wet and dry forms, with wet deposition having a pH lower than 5.6. **True/False**
2. Primary pollutants are emitted directly from a source, such as industrial stacks or volcanic eruptions. **True/False**
3. Secondary pollutants result from the chemical reactions of primary pollutants in the atmosphere. **True/False**
4. Sulfuric acid and nitric acid are examples of primary pollutants. **True/False**
5. Smog is considered a secondary pollutant. **True/False**
6. Wet deposition (including rain, snow, hail, and fog) typically falls far from its original pollution source. **True/False**

Use the diagram below to answer the following questions:

Name: _____ AICE Environmental Management AS

7. Managing the Atmosphere

Day 1 Bellringer

Identify if the following statements are true or false:

1. Acid deposition includes both acidic wet and dry forms, with wet deposition having a pH lower than 5.6. **True/False**
2. Primary pollutants are emitted directly from a source, such as industrial stacks or volcanic eruptions. **True/False**
3. Secondary pollutants result from the chemical reactions of primary pollutants in the atmosphere. **True/False**
4. Sulfuric acid and nitric acid are examples of primary pollutants. **True/False**
5. Smog is considered a secondary pollutant. **True/False**
6. Wet deposition (including rain, snow, hail, and fog) typically falls far from its original pollution source. **True/False**
7. Dry deposition includes dust and gases like sulfur dioxide and nitrogen oxide, generally settling closer to the source. **True/False**
8. Sulfur dioxide, produced by burning coal, is an example of a primary pollutant. **True/False**

Fill in the blanks with the missing word:
Nitric acid, Sulfur, nitrogen monoxide, Sulfur dioxide, sulfuric acid

Fossil fuels contain sulfur compounds. When fossil fuels are burned, Sulfur dioxide gas is released into the atmosphere. At high temperatures inside vehicle engines, nitrogen from the atmosphere reacts with oxygen to form Nitrogen monoxide gas. This gas is then released into the atmosphere in vehicle emissions as Nitrogen monoxide. In the atmosphere, sulfur dioxide reacts with water and oxygen to form Sulfuric acid. Similarly, nitrogen monoxide reacts with water and oxygen in the atmosphere to form Nitric acid.

Use the diagram below to answer the following questions:

1. Identify the name of the chemicals at points A, B, C and D on the diagram above.
 - A Sulfur dioxide
 - B Nitrogen monoxide
 - C Sulfuric acid
 - D Nitric acid [4]
2. Describe two effects chemicals forming at points D and C can have on vegetation. [2]
 - Can cause defoliation (trees lose their leaves)
 - Damage the chloroplasts which reduces photosynthesis
3. Describe two effects chemicals forming at points D and C can have on aquatic organisms. [2]
 - kills larva of fish, mollusks, amphibians
 - negatively affecting organisms relying on these for food.

How to use the *Bell Ringers*



- ✓ **Edit:** you can customize it for your students.
- ✓ **Use** as Bell Ringer/Warm-up or as Exit Ticket.
- ✓ **Print:** print one day/page at a time, or all the bell ringers for the chapter at once.
- ✓ **Practice:** students can work individually or with a partner.
- ✓ **Discuss:** use the bell ringer a tool for class discussion each day.

Enhances classroom management: Bell ringers improve classroom management by providing students with a structured activity as soon as they enter the room.

AICE Environmental Management AS

Name: _____

7. Managing the Atmosphere

Bellringer

Day 3

The following statements are about the impacts of photochemical smog.
Match each item in Column A with the correct description or example in Column B.

Column A	Column B	Answer	
		Column A	Column B
1. Photochemical smog	A. Eye and respiratory irritation; triggers asthma attacks	1. Photochemical smog	
2. Sources of NOx	B. Coniferous trees, paint, gas stations, plastics factories	2. Sources of NOx	
3. Sources of VOCs	C. Car exhaust	3. Sources of VOCs	
4. Health impacts	D. Mixture of air pollutants (including ozone) formed in sunlight	4. Health impacts	
5. Economic impacts	E. Decreased crop yields	5. Economic impacts	
6. Food insecurity	F. Deterioration of plastics, reduced visibility	6. Food insecurity	

Identify if the following statements are true or false:

- Photochemical smog is formed when oxides of nitrogen and volatile organic compounds react in the presence of sunlight, producing ground-level ozone. **True/False**
- Car exhaust is primarily a source of oxides of nitrogen (NOx), not volatile organic compounds (VOCs). **True/False**
- Photochemical smog has no impact on human health. **True/False**
- Reduced visibility caused by photochemical smog can negatively impact transportation. **True/False**
- Only man-made sources, like paint fumes and plastic factories, produce volatile organic compounds; natural sources such as coniferous trees do not. **True/False**

Choose the correct answer:

- Which of the following is a primary strategy for managing air pollution?
 - Increasing the use of high-sulfur coal
 - Reducing the use of fossil fuels
 - Encouraging more single-passenger vehicle trips
 - Storing hazardous materials in open containers
- Flue gas desulfurization (scrubbers) is used to reduce emissions of which pollutant?
 - Oxides of nitrogen (NOx)
 - Particulates
 - Sulfur dioxide (SO₂)
 - Volatile organic compounds (VOCs)

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How to use the Notes/PowerPoint, Guided Notes and Bell Ringers to prep students for AICE Exam

1. Assign students to read specific sections of the **PowerPoint/Notes** (example slides)

7.1 Acid deposition
Acid deposition = a mix of air pollutants that deposit from the atmosphere as acidic wet deposition (with a pH <5.6) or acidic dry deposition.
Describe the two types of acid deposition

WET DEPOSITION

- snow, rain, hail, fog
- Sulfuric acid and nitric acid (secondary pollutants)
- Fall far from source

DRY DEPOSITION

- dust and gases
- Sulfur dioxide and nitrogen oxide (primary pollutants);
- Fall close to source.

Outline the formation of acid deposition

- Fossil fuels contain sulfur compounds
- combustion of fossil fuels releases sulfur dioxide gas
- nitrogen from the atmosphere reacts with oxygen in the high temperatures of vehicle engines to form nitrogen monoxide gas
- nitrogen monoxide gas is released into the atmosphere in vehicle emissions
- Sulfur dioxide gas reacts with water and oxygen in the atmosphere to form sulfuric acid;
- nitrogen monoxide gas reacts with oxygen and water in the atmosphere to form nitric acid

2. Have students take notes using the **Student Guided Notes** format as homework (example page one)

AICE Environmental Management
 Unit#7 Managing The Atmosphere Guided Notes

7.1 Acid deposition

Define acid deposition –

Describe the two types of acid deposition

Wet Deposition	Dry Deposition
•	•
•	•

3. Upon entering class, provide them with a **bell ringer** activity (example Day 1 Bell Ringer)

Name: _____

AICE Environmental Management AS

7. Managing the Atmosphere

Day 1

Bellringer

Identify if the following statements are true or false:

1. Acid deposition includes both acidic wet and dry forms, with wet deposition having a pH lower than 5.6. **True/False**
2. Primary pollutants are emitted directly from a source, such as industrial stacks or volcanic eruptions. **True/False**
3. Secondary pollutants result from the chemical reactions of primary pollutants in the atmosphere. **True/False**
4. Sulfuric acid and nitric acid are examples of primary pollutants. **True/False**
5. Smog is considered a secondary pollutant. **True/False**
6. Wet deposition (including rain, snow, hail, and fog) typically falls far from its original pollution source. **True/False**
7. Dry deposition includes dust and gases like sulfur dioxide and nitrogen oxide, generally settling closer to the source. **True/False**
8. Sulfur dioxide, produced by burning coal, is an example of a primary pollutant. **True/False**

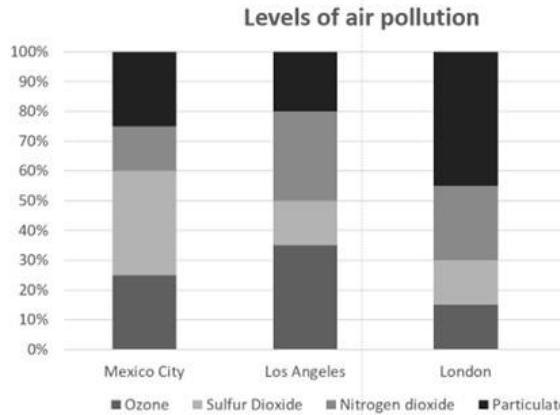
Use the diagram below to answer the following questions:

1. Identify the name of the chemicals at points A, B, C and D on the diagram above.

A _____

This approach ensures that students preview the concepts before you teach them in class, facilitating content mastery even among lower-level students.

1. The graph below contains data about the different types of air pollution locations.

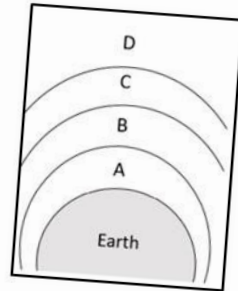


(a) Compare the data for the differences in air pollution.

(b) Suggest two reasons for the differences in air pollution identified in (a).

(c) Identify and describe two management strategies Los Angeles could implement to reduce air pollution.

2. The diagram below represents the different layers of the atmosphere.



(a) Identify the layer of the atmosphere where ozone is naturally found.

(b) List one chemical that causes ozone layer depletion.

(c) List two sources for the substance listed in (b).

(d) Describe how the chemical listed for question 2. (b) causes the depletion of ozone.

(e) Identify two impacts ozone depletion has on human health.

(f) List and describe two alternatives to CFC's.



Thought-provoking questions encourage critical thinking, data evaluation, and problem-solving—key components of the AICE curriculum.

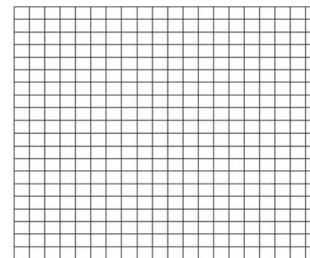
(d) Describe the conditions that make the ozone depletion greater over the Antarctica.

4. Table below has data on sulfur dioxide emissions from 1960 to 2020 in different regions of the world.

Region	SO2 emissions (m tonnes)			
	1960	1980	2000	2020
Africa	3	4	6	7
Asia	18	32	41	50
Europe	35	50	27	20
North America	28	31	20	12
South America	4	9	8	7

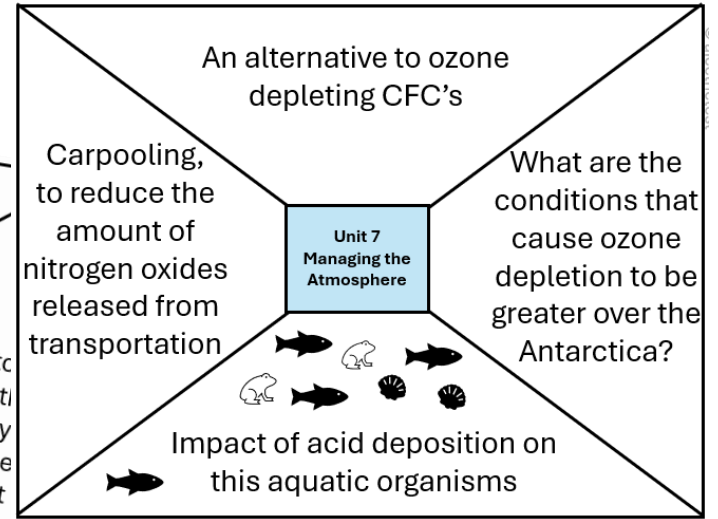
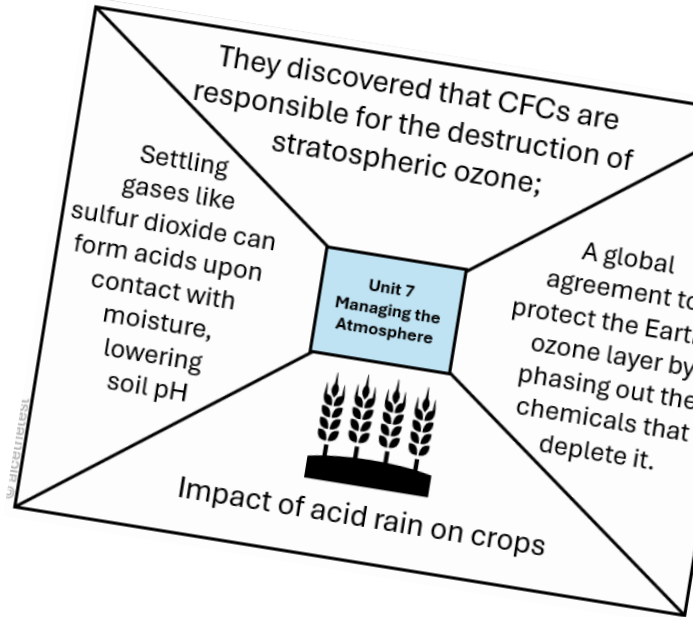
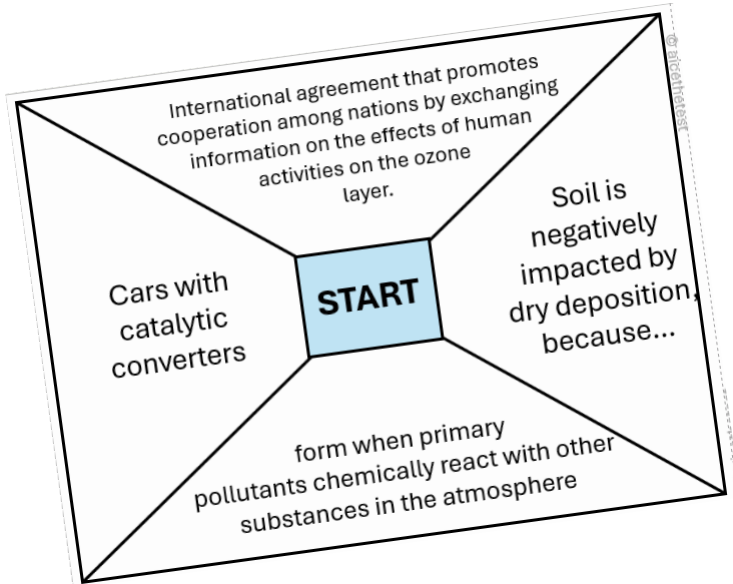
Table 4

(a) Graph the data in the space provided. [4]



Regular exposure to exam-style questions builds familiarity, reducing test anxiety and helping students perform better under timed conditions.

Students arrange the puzzle pieces to match the statement/question with the answer.



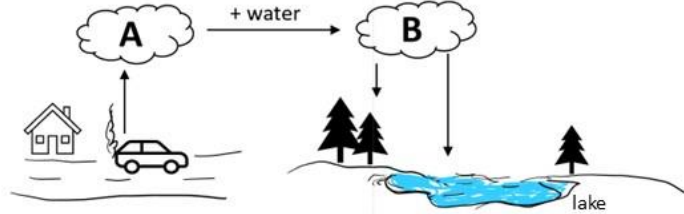
PDF File

Answer Key

<p>International agreement that promotes cooperation among nations by exchanging information on the effects of human activities on the ozone layer.</p> <p>START</p> <p>Cars with catalytic converters</p> <p>form when primary pollutants chemically react with other substances in the atmosphere</p>	<p>Soil is negatively impacted by dry deposition because...</p> <p>Settling gases like sulfur dioxide can form acids upon contact with moisture, lowering soil pH</p> <p>Impact of acid rain on crops</p>	<p>UV directly damages chloroplasts, slowing photosynthesis</p> <p>Dry deposition differs from wet deposition in that it...</p> <p>Stomach</p>	<p>An alternative to ozone depleting CFC's</p> <p>Carpooling, to reduce the amount of nitrogen oxides released from transportation</p> <p>Impact of acid deposition on this aquatic organisms</p>	<p>A management strategy to reduce acid deposition</p> <p>What are the conditions that cause ozone depletion to be greater over the Antarctica?</p> <p>Sources of fluorinated gases</p>
<p>Secondary pollutants</p> <p>How do CFCs react with other chemicals in the atmosphere?</p> <p>Which substances are associated with acid rain in wet deposition?</p> <p>Sulfuric acid (H₂SO₄) and nitric acid (HNO₃)</p> <p>This human activity causes air pollution</p> <p>Primary pollutants</p> <p>Sources of CFCs</p> <p>Dobson Unit (DU)</p>	<p>Reduced crop yield</p> <p>How do CFCs react with other chemicals in the atmosphere?</p> <p>Examples of secondary pollutants</p> <p>Sulfuric acid and nitric acid</p> <p>Smog</p> <p>Eye and respiratory irritation</p> <p>Chronic linked to ozone depletion</p> <p>Chlorofluorocarbons (CFCs)</p> <p>Water, oxygen</p> <p>Refrigerants, solvents, and foam-forming agents</p> <p>Sources of chlorofluorocarbons (CFCs)</p> <p>Fossil fuels such as coal and oil</p> <p>One way to reduce the flow that causes photochemical smog</p>	<p>Photochemical smog</p> <p>Combustion of fossil fuels releases</p> <p>Sulfur dioxide (SO₂)</p> <p>Why is the ozone layer important for life on Earth?</p> <p>It absorbs harmful ultraviolet (UV) radiation</p> <p>Eye cataracts</p> <p>Primary benefit of using solar panels is that they produce energy without emitting greenhouse gases.</p> <p>Impact on marine organisms linked to increased UV radiation due to ozone depletion</p> <p>Reduction in phytoplankton leading to decreased food chain</p> <p>Less visible, so they break down more in the atmosphere</p> <p>A mixture of air pollutants and particulates, including ground level ozone</p> <p>Photochemical smog</p> <p>US agreement which requires an annual testing program for sulfur dioxide (SO₂)</p> <p>Do not contain chlorine</p> <p>Hydrochlorofluorocarbons (HCFCs)</p>	<p>Kills tens of fish, mollusks, amphibians</p> <p>Sulfur dioxide (SO₂)</p> <p>What pollutant is directly released when fossil fuels are burned?</p> <p>Common use of HCFCs</p> <p>Restrict vehicle use in urban areas</p> <p>Endless stone buildings</p> <p>Catalytic converters</p> <p>HCFCs decompose more quickly in the troposphere</p> <p>Their low reactivity provide surfaces for chemical reactions that release active chlorine</p> <p>One way to prevent acid deposition is...</p> <p>Using natural gas instead of coal to produce electricity</p> <p>Why are HCFCs considered less harmful than CFCs?</p> <p>How do HCFCs differ chemically from CFCs?</p> <p>HCFCs contain fewer chlorine atoms (instead of 1)</p> <p>Chlorine gases react by breaking apart into free radicals</p> <p>Using natural gas instead of coal to produce electricity</p>	<p>Fluorinated gases (F-gases)</p> <p>What is a key reason that UV radiation harms and soot particles?</p> <p>What is the main component of acid rain?</p> <p>What is the main component of acid rain?</p> <p>What is the main component of acid rain?</p>

By transforming chapter review into an interactive game, students become active participants in their learning process—motivated to solve puzzles rather than passively memorize facts.

1. Burning fossil fuels is the cause of acid deposition. Figure below shows one source of air pollution causing acid deposition.



(a) Define the term primary pollutant. Give one example of primary pollutant.

(b) Identify the pollutant labeled "A" and "B"

A _____

B _____

(c) Describe the effect acid deposition have on vegetation and the aquatic ecosystem.

(d) Identify one difference between dry deposition and wet deposition.

2. Photochemical smog is a type of air pollution that is common in urban areas.

(a) Describe the formation of photochemical smog.



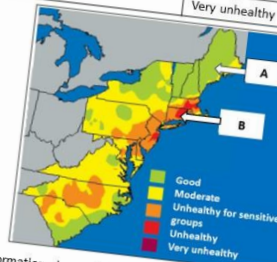
The resource mimics
 real AICE
 Environmental
 Management exam
 questions, giving
 students targeted
 practice for the test
 format they'll face.

Includes math
 calculations, data
 interpretation, and
 content-based
 questions to develop
 all the essential skills
 needed for success.

(b) Identify **one** impact of photochemical smog on humans and **one** impact on the economy.
 Humans _____
 Economy _____

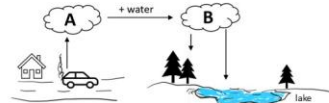
(c) The data table describe air quality at different ozone concentrations (ppm). The map shows the distribution of ozone at different locations on the eastern coast of United States.

Ozone concentration (ppm)	Air quality descriptor
0.064	Good
0.084	Moderate
0.104	Unhealthy for sensitive groups
0.124	Unhealthy
0.404	Very unhealthy



i. Using the information above, state the ozone concentration at location A and B.
 ii. Compare the air quality at location A and location B.
 iii. State **one** reason for the difference in the concentration of ozone at the two locations.
 iv. Calculate the difference in ozone concentration between location A and location B.

1. Burning fossil fuels is the cause of acid deposition. Figure below shows one source of air pollution causing acid deposition.



(a) Define the term primary pollutant. Give one example of primary pollutant.

- Pollutant released directly from the source.
- For example, Nox, SO2.

(b) Identify the pollutant labeled "A" and "B"

A. • Nitrogen oxide

B. • Nitric acid

(c) Describe the effect acid deposition have on vegetation and the aquatic ecosystem.

- Vegetation – increased soil acidity removes important nutrients from soil and reduce the growth of vegetation; leaves turn brown and plants could lose their leaves, causing a decline in photosynthesis and weakened immune systems.
- Aquatic organisms – acidity of lakes is changed and that lowers the change of survival for juvenile stages of many species; in acidic waters salmon make it hard for their to breathe as their gill function is reduced.

(d) Identify one difference between dry deposition and wet deposition.

- Dry deposition is represented by gases and particles, without the addition of water versus wet deposition which involves the reaction of gases with water.

2. Photochemical smog is a type of air pollution that is common in urban areas.

(a) Describe the formation of photochemical smog.

- Nitrogen oxide from car exhaust reacts with VOCs in the presence of sunlight and form photochemical smog.



How To Use the Task Cards

Individual Practice:

- Distribute the task cards to each student, allowing them to work through the questions independently. Students can use the answer key after attempting each question.
- Encourage students to write down any questions or concepts they find challenging for a follow-up discussion in class.

7. Managing the atmosphere

What is a secondary pollutant? Give two examples. [2]

7. Managing the atmosphere

Define primary pollutant and give two examples. [2]

7. Managing the atmosphere

List and describe two causes of acid deposition [4]

7. Managing the atmosphere

Explain why air pollution is considered a global problem. [2]

7. Managing the atmosphere

List and describe three environmental impacts of acid deposition. [6]

- Reduces the pH level of soil and leaches aluminum causing reduced growth of plants;
- If aluminum reaches a body of water is toxic for fish, making it harder for fish to breathe.
- Acid rain on tree's leaves turn them brown, not able to photosynthesis, and trees lose their foliage.

7. Managing the atmosphere

Compare dry deposition to wet deposition. [4]

- Dry deposition-acidic dust and gases particles will deposit without the addition of moisture; usually fall far away from the source
- Wet deposition – falls/affects areas closer to source and the sulfur dioxide or nitrogen oxide reacts with water in the atmosphere.

7. Managing the atmosphere

List and describe two management strategies to reduce the effects of acid rain. [4]

- Reducing emission of sulfur dioxide by reducing sulfur content in coal or using high grade coal;
- Replacing coal burning power plants with natural gas ;

7. Managing the atmosphere

List and describe two socio-economic impacts of acid deposition. [4]

- Reduced crop productivity can cause loss of jobs and increase in food prices;
- Reducing aquatic species, can impact the fishing industry causing loss of jobs.

Group Practice:

- Divide students into small groups and provide each group with a set of task cards. Students can take turns reading questions aloud and discussing their answers before revealing the correct answer.
- This method fosters collaboration and allows students to clarify their understanding of the topics as they discuss potential answers with peers.

7. Managing the atmosphere

Ozone depletion is greater over Antarctica. Describe the atmospheric conditions specific to Antarctica that cause the ozone hole? [4]

7. Managing the atmosphere

Explain why the ozone destruction hypothesis proposed by Rowland and Molina was at first not accepted? [2]

Check out my blog for lesson plans, curriculum pacing guides, activities and more. <https://aicethetest.com/>

Unit#7 Managing The Atmosphere – 3 weeks/8 class periods

Day#	Date	Topic/Objectives	Activities/Resources
1		7.1 Acid deposition <ul style="list-style-type: none"> define acid deposition describe the two types of acid deposition outline the formation of acid deposition outline the impacts of acid deposition on: aquatic environments, vegetation and crops, stone and brick buildings 	<ul style="list-style-type: none"> Bellringer#1 Lecture/Notes (PPT – slides 1-11) Student Guided Notes “Environmental Management in Context: Air quality index and real time air pollution monitoring” – page 274-275 (Coursebook) 7.1 Questions 1-3 page 282 (Coursebook)
2		<i>Practical – the effect of acid deposition on plant growth</i>	
3		7.2 Photochemical smog 7.3 Managing air pollution <ul style="list-style-type: none"> define photochemical smog describe the impacts of photochemical smog describe strategies for managing air pollution 	<ul style="list-style-type: none"> Bellringer#2 Lecture/Notes (PPT – slides 12-17) Case Study -Air pollution in the Greater Cairo region – page 282 -284 (Coursebook) Practice questions 1 and 3 – page 296 -299 (Coursebook)
4		Quiz 7.4 Ozone depletion <ul style="list-style-type: none"> outline how ozone depletion occurs define the term ozone hole explain why ozone depletion has been greatest over Antarctica describe the impacts of ozone depletion due to the increased amounts of ultraviolet radiation 	<ul style="list-style-type: none"> Bellringer#3 Lecture/Notes (PPT – slides 18-22) QUIZ 7.3 Questions 1- 2 -page 292 (Coursebook) Practice Questions page 298 – question 2 (Coursebook)
5		7.4 Ozone depletion Review <ul style="list-style-type: none"> evaluate the international agreements used to reduce and phase out the use of ozone depleting substances outline the impacts associated with the use of some alternatives to ozone depleting substances outline the importance of experimental evidence to support a hypothesis, using the ozone destruction hypothesis suggested by Rowland-Molina as an example 	<ul style="list-style-type: none"> Bellringer#4 Lecture/Notes (PPT – slides 22-26) Managing the Atmosphere Task Cards