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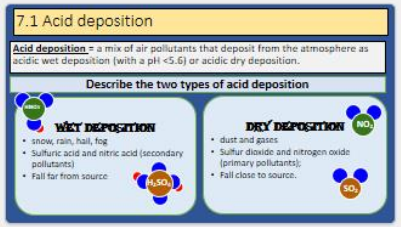

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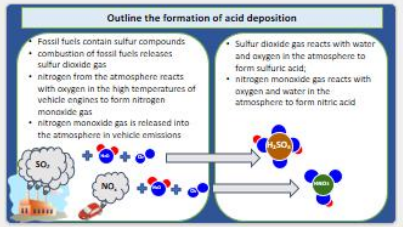

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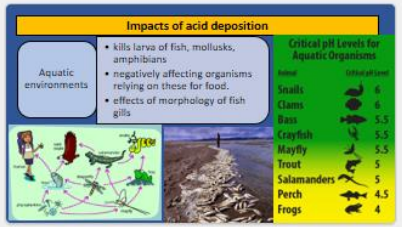

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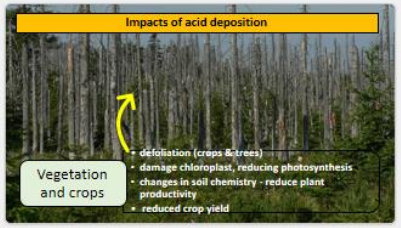

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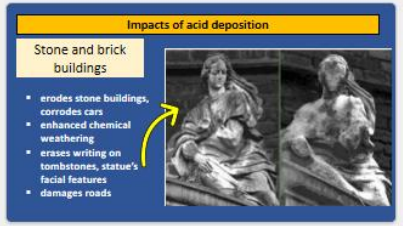

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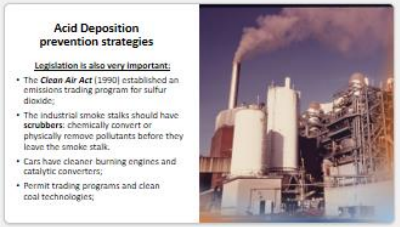

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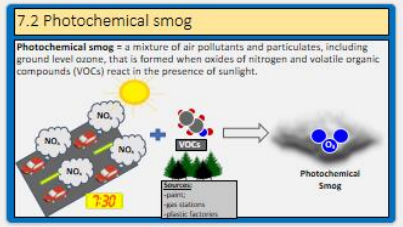

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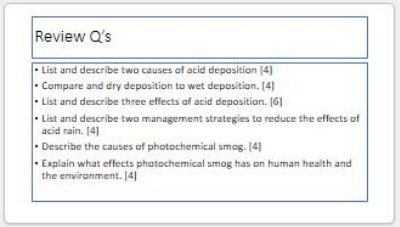

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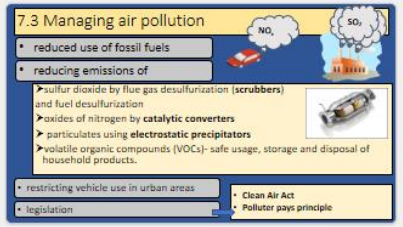

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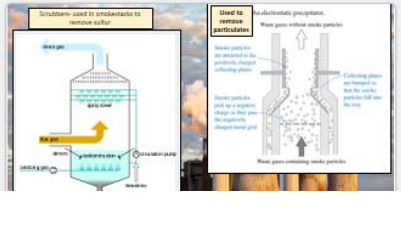
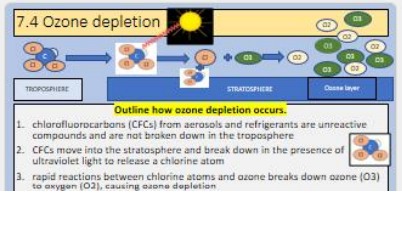
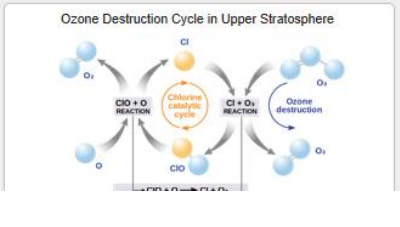
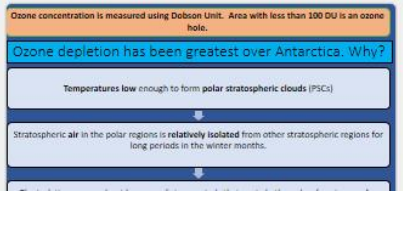








PPT/NOTES Presentation

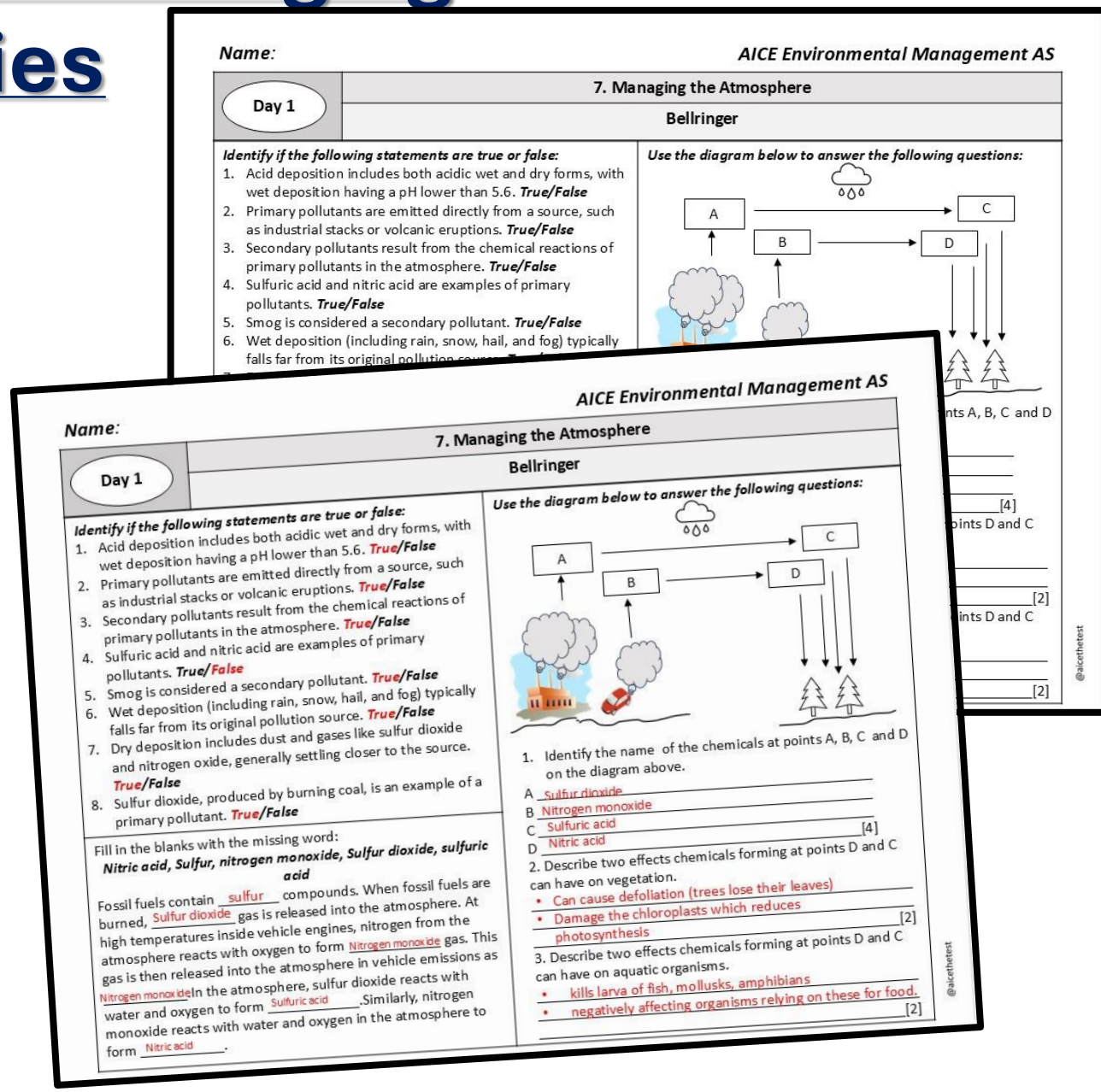
All slides are editable.

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

Day 1 — 7. Managing the Atmosphere — 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 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.
   - Can cause defoliation (trees lose their leaves)
   - Damage the chloroplasts which reduces photosynthesis [2]

3. Describe two effects chemicals forming at points D and C can have on aquatic organisms.
   - kills larva of fish, mollusks, amphibians
   - negatively affecting organisms relying on these for food. [2]

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

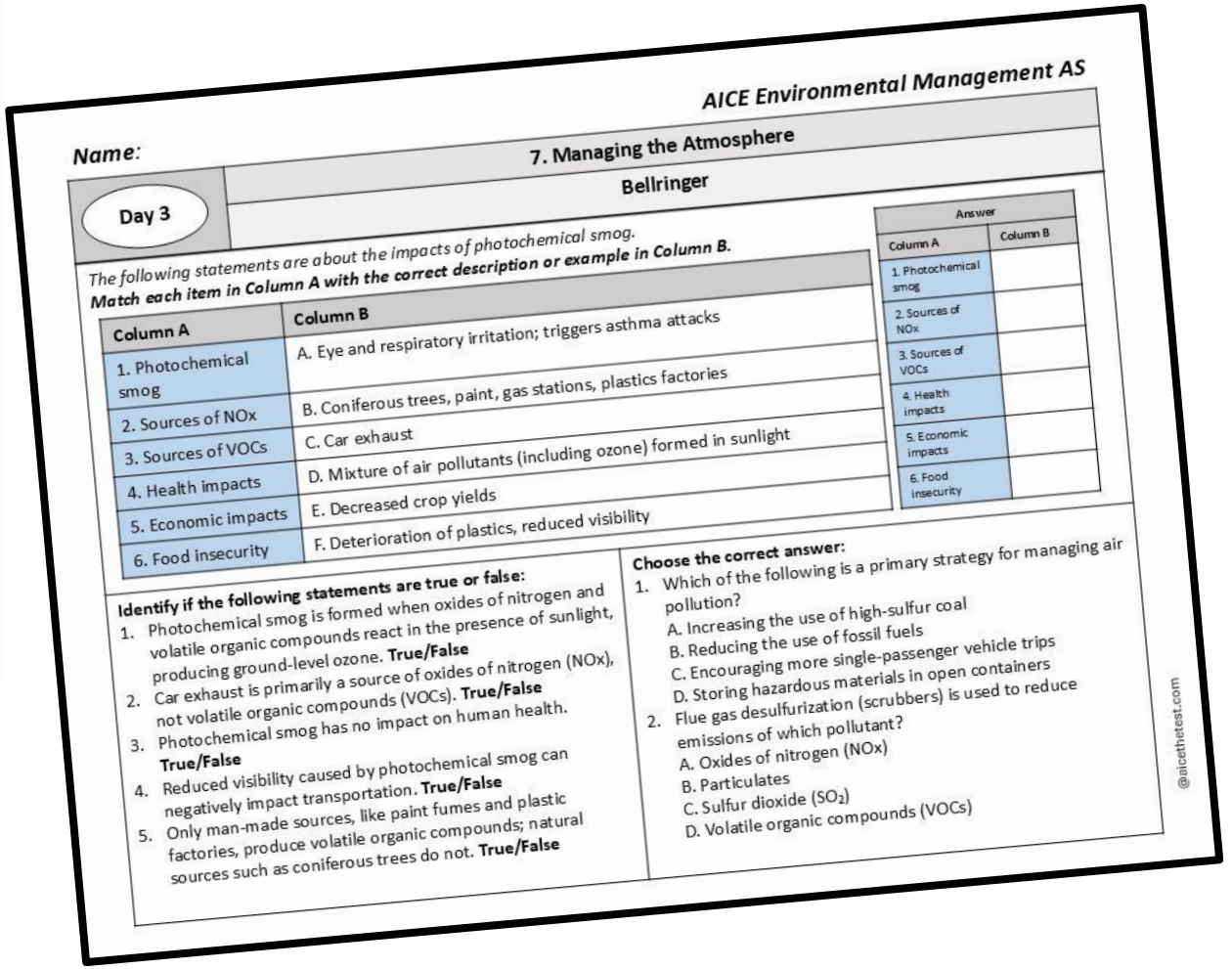
Fossil fuels contain sulfur compounds. When fossil fuels are burned, Sulfur dioxide gas is released into the atmosphere. At high temperatures inside vehicle engines, nitrogen from the atmosphere reacts with oxygen to form Nitrogen monoxide gas. This gas is then released into the atmosphere in vehicle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

@aicethetest

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

Answer	
Column A	Column B
1. Photochemical smog	
2. Sources of NOx	
3. Sources of VOCs	
4. Health impacts	
5. Economic impacts	
6. Food insecurity	

Identify if the following statements are true or false:

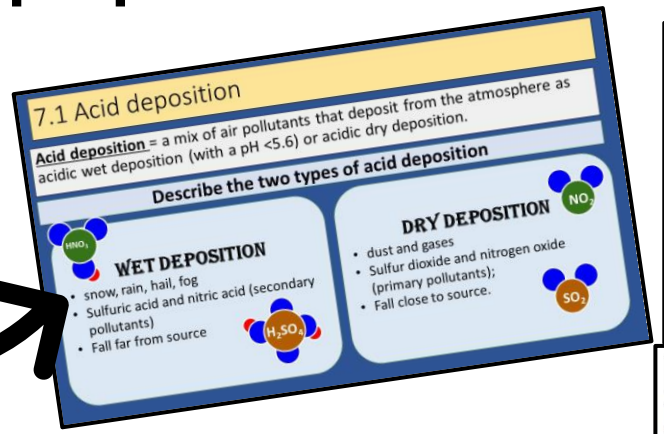
1. Photochemical smog is formed when oxides of nitrogen and volatile organic compounds react in the presence of sunlight, producing ground-level ozone. **True/False**
2. Car exhaust is primarily a source of oxides of nitrogen (NOx), not volatile organic compounds (VOCs). **True/False**
3. Photochemical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

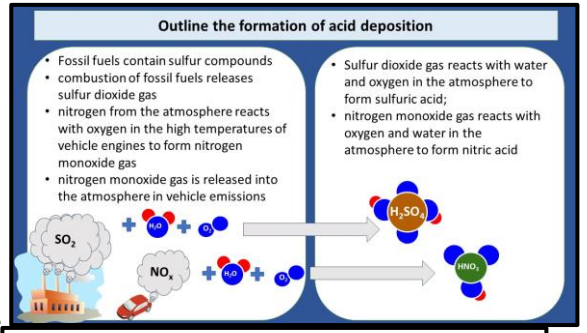
Choose the correct answer:

1. Which of the following is a primary strategy for managing air pollution?
   A. Increasing the use of high-sulfur coal
   B. Reducing the use of fossil fuels
   C. Encouraging more single-passenger vehicle trips
   D. Storing hazardous materials in open containers
2. Flue gas desulfurization (scrubbers) is used to reduce emissions of which pollutant?
   A. Oxides of nitrogen (NOx)
   B. Particulates
   C. Sulfur dioxide (SO_2)
   D. Volatile organic compounds (VOCs)

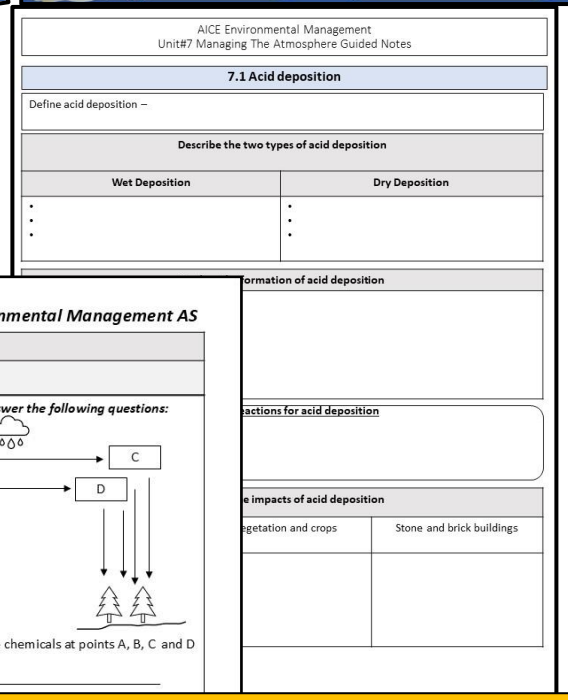
How to use the Notes/PowerPoint, Guided Notes and Bell Ringers to prep students for AICE Exam

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

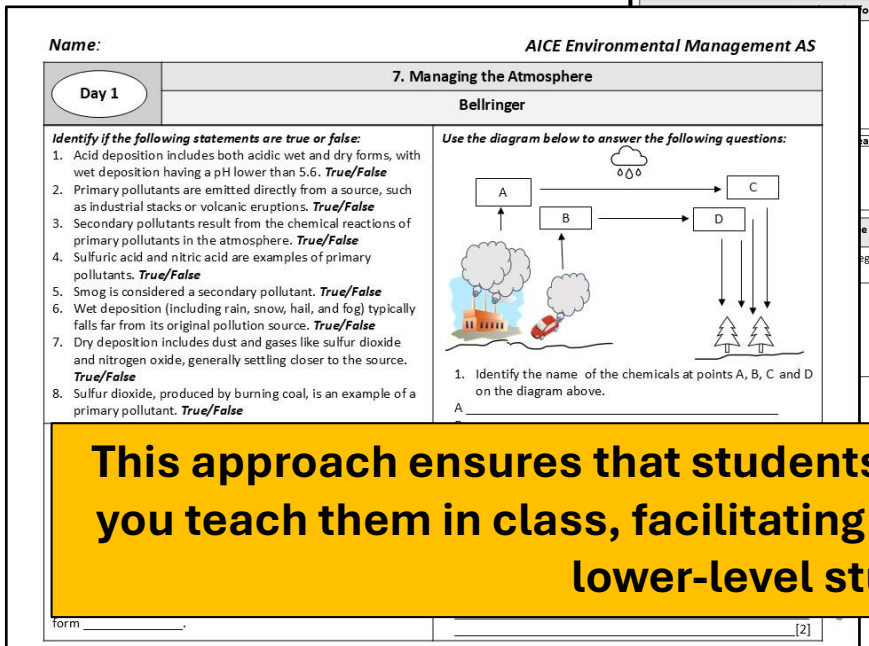




2. Have students take notes using the **Student Guided Notes** format as homework (example page one)



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

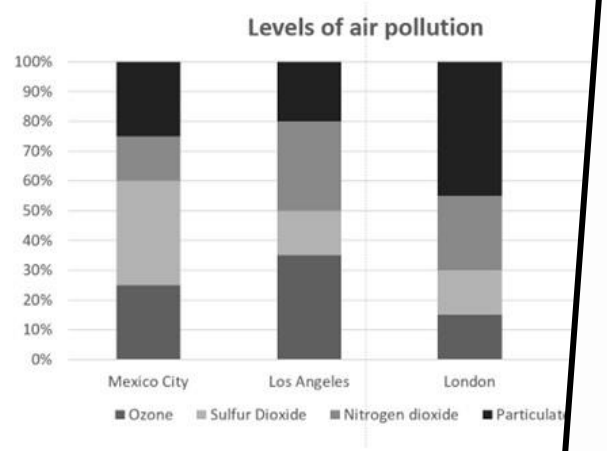


This approach ensures that students preview the concepts before you teach them in class, facilitating content mastery even among lower-level students.

AICE Environmental Management
Chapter#7 Managing the Atmosphere
Practice Questions

N_____
P_____
D_____

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



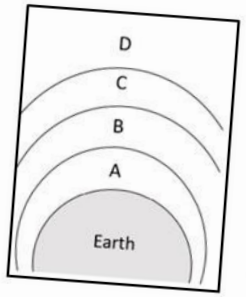
(a) Compare the data for the differences in air pollution.

(b) Suggest two reasons for the differences in air pollution identifie

(c) Identify and describe two management strategies Los Angeles could implemen pollution.

[4]

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



(a) Identify the layer of the atmosphere wh naturally found.

(b) List one chemical that causes ozone layer d

(c) List two sources for the substance listed in q

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

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

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

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

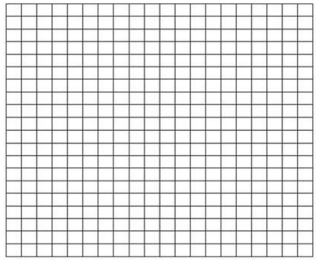
[3]

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

Region	SO2 emissions (m tones)			
	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]

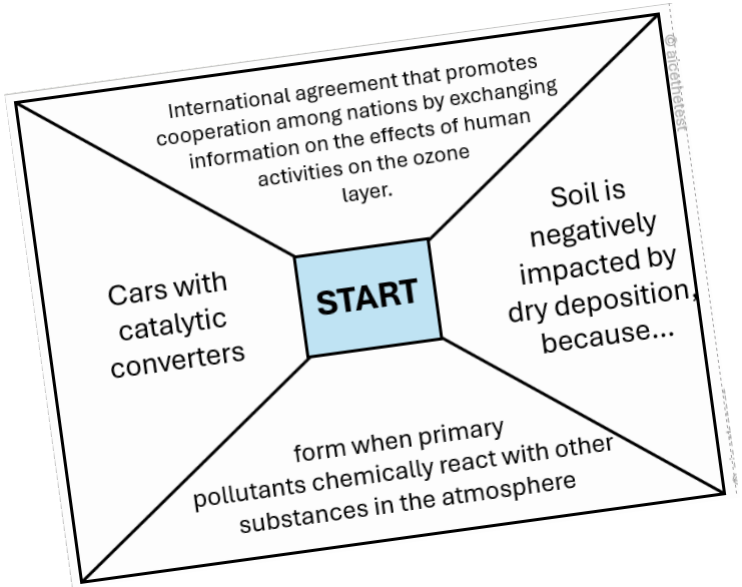


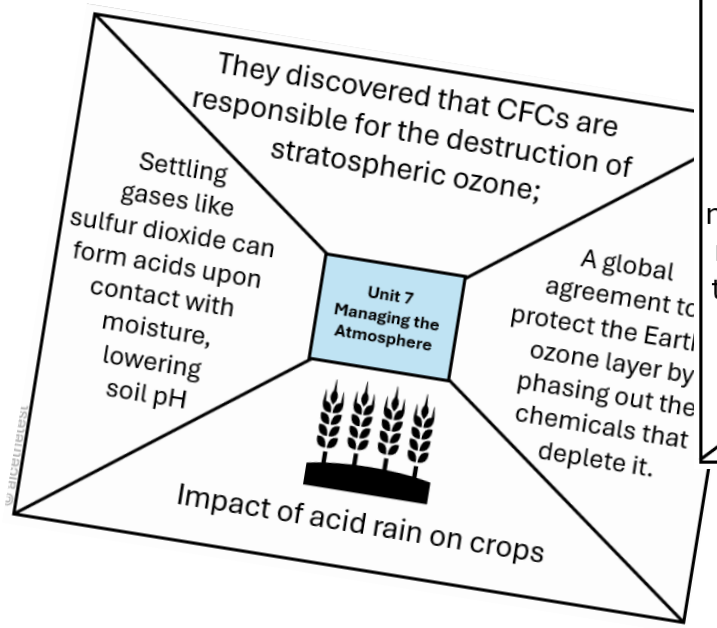
AICE the Test

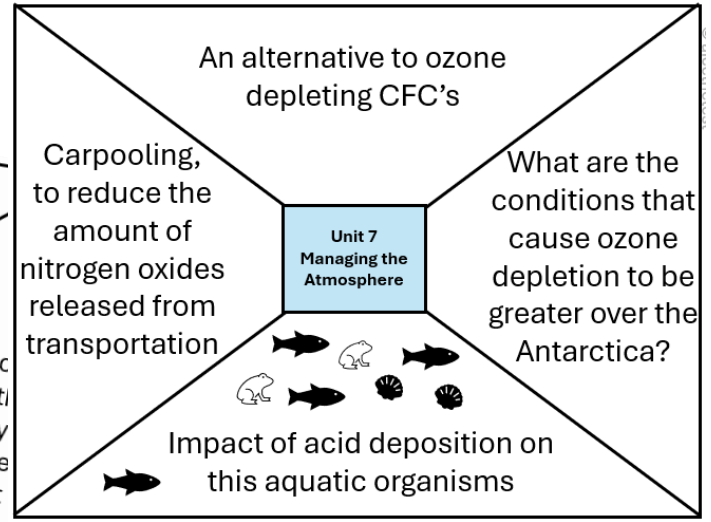
Thought-provoking questions encourage critical thinking, data evaluation, and problem-solving—key components of the AICE curriculum.

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.







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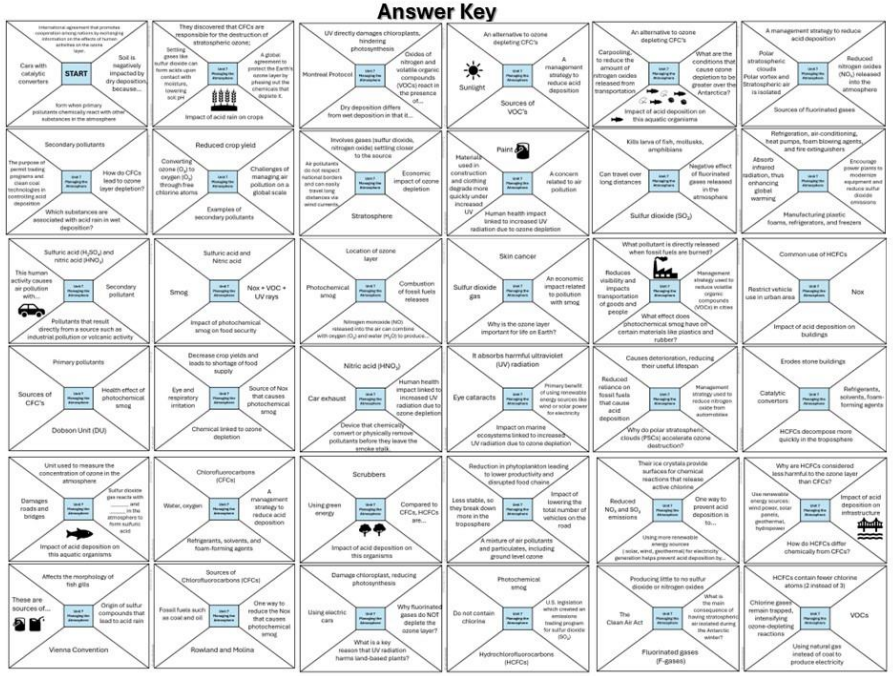
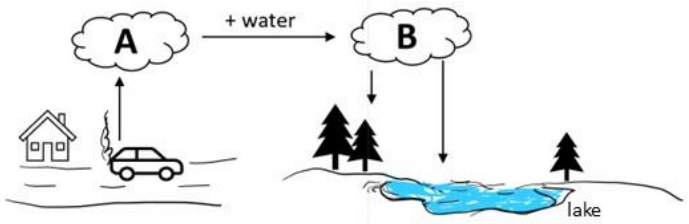


By transforming chapter review into an interactive game, students become active participants in their learning process—motivated to solve puzzles rather than passively memorize facts.

AICE Environmental Management
Chapter#7 Managing the Atmosphere
Quiz – Acid deposition and Photochemical smog (7.1 and 7.2)

Name_____
Period_____
Date_____

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.

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

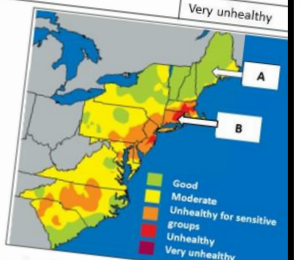
Humans

Economy

[2]

(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 loc

ii. Compare the air quality at location A and location B.

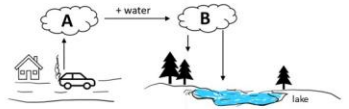
iii. State **one** reason for the difference in the concentration of ozone at the

iv. Calculate the difference in ozone concentration between location A and l

AICE Environmental Management
Chapter#7 Managing the Atmosphere
Quiz

Name_____
Period_____
Date_____

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.

[2]

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

A • Nitrogen oxide

B • Nitric acid

[2]

(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 tan or 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 aluminum makes it hard for fish to breath as their gill function is reduced.

[4]

(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]

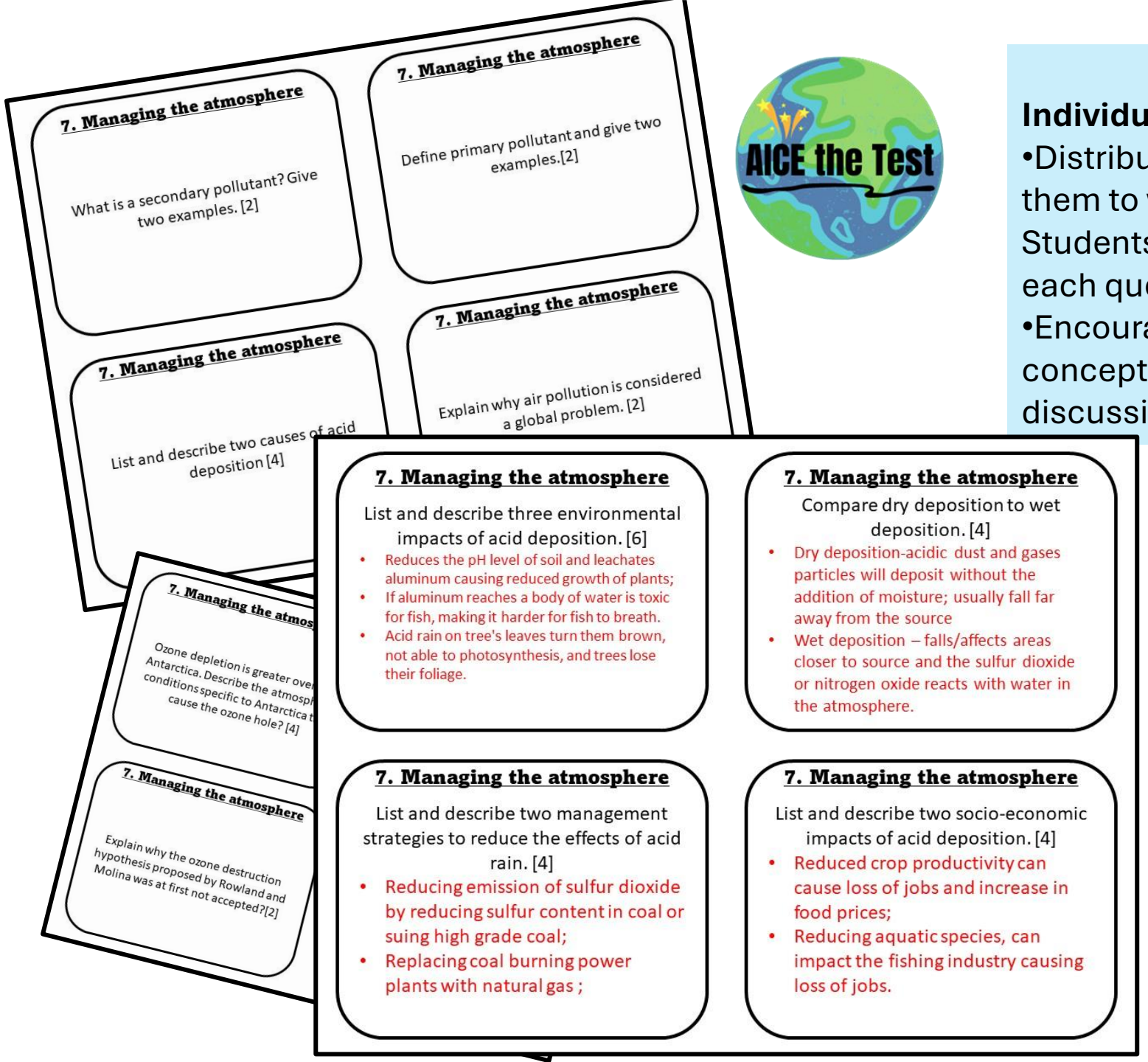
2. Photochemical smog is a type of air pollution that is common in urban areas.
(a) Describe the formation of photochemical smog.
- Nitrogen oxide from car exhaust reacts with VOCs in the presence of sunlight and form photochemical smog.

[3]

AICE the Test

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.



AICE the Test

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.

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.

Unit#7 Managing The Atmosphere – 3 weeks/8 class periods			
Day#	**Date**	**Topic/Objectives**	**Activities/Resources**
1		***7.1 Acid deposition*** • 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	• **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		***Practical – the effect of acid deposition on plant growth***	
3		***7.2 Photochemical smog*** ***7.3 Managing air pollution*** • define photochemical smog • describe the impacts of photochemical smog • describe strategies for managing air pollution	• **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*** • 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	• **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*** • 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	• **Bellringer#4** • Lecture/Notes (PPT – slides 22-26) • Managing the Atmosphere Task Cards