



I Can Statement - Year 8

Environmental Chemistry

Unit/Topic Overview	Pre-taught Vocabulary	
This topic of environmental chemistry explores the chemical processes happening all around us in nature, and how human activity alters the delicate balance of our planet. In this brief unit, we will investigate the Earth's atmosphere and the vital cycles, like the carbon cycle, that keep it stable. You will discover how burning fossil fuels releases greenhouse gases like carbon dioxide, trapping heat and driving climate change. We will also look at the chemistry behind modern challenges like air pollution, acid rain, and deforestation, and may touch upon how sustainable science and green chemistry can help us protect our water, soil, and air for the future.	Greenhouse gas	Sedimentary
	Carbon cycle	Igneous
	Climate change	Metamorphic
	Acid rain	Sustainability
	Pollution	Renewables

RAG Rating:		Start	End
1.	I can state the proportions of different gases in the Earth's current atmosphere (approx. 78% Nitrogen, 21% Oxygen, and small amounts of Carbon Dioxide, Argon, and Water Vapor).		
2.	I can explain how greenhouse gases (like Carbon Dioxide and Methane) trap heat in the atmosphere, maintaining Earth's temperature, and describe the difference between the natural greenhouse effect and the enhanced greenhouse effect.		
3.	I can identify the key processes that move carbon between the atmosphere, land, and oceans, including Photosynthesis, Respiration, Combustion, and Decomposition.		
4.	I can link the burning of fossil fuels and deforestation to the increase in atmospheric Carbon Dioxide levels and explain how this contributes to global warming.		
5.	I can distinguish between complete combustion (producing CO ₂ and H ₂ O) and incomplete combustion (producing toxic Carbon Monoxide and soot/carbon particulates).		
6.	I can identify the origins and effects of common pollutants, such as Sulfur Dioxide and Nitrogen Oxides (leading to acid rain) and their impact on buildings and ecosystems.		
7.	I can describe how coal, oil, and gas were formed over millions of years from the remains of ancient biomass and explain why they are considered non-renewable resources.		
8.	I can describe how the Earth's atmosphere has changed over billions of years, specifically how early volcanic activity produced CO ₂ and how the evolution of photosynthetic organisms increased Oxygen levels.		
9.	I can explain the importance of the Earth as a source of limited resources and the necessity of recycling materials (like aluminum and glass) to conserve energy and reduce environmental impact.		
10.	I can define potable water (safe to drink) and describe the basic chemical and physical processes used to treat water, such as filtration and chlorination to kill microbes.		

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