



CHEMISTRY NEWSLETTER SPOTLIGHT: YEAR 9.5 BEGINS IGCSE JOURNEY.

The new Year 9.5 Chemistry group has made an exciting and impressive start to their preparation for Cambridge Assessment International Education Chemistry. Over the past few weeks, students have been exploring some of the most fascinating natural processes that shape life on Earth, including the water cycle, carbon cycle, nitrogen cycle, air quality, climate change and global warming. These topics provide an excellent introduction to Chemistry because they demonstrate how atoms and molecules move continuously through the environment. It has been truly inspiring to see students enthusiastically engaging in classroom discussions, asking thoughtful questions and connecting scientific concepts to real-life situations in Dar es Salaam and beyond.

The water cycle shows how water evaporates, condenses into clouds and returns to Earth as rain, ensuring a constant supply of fresh water. The carbon cycle explains how carbon dioxide is absorbed by plants during photosynthesis, passed through food chains and released back into the atmosphere through respiration and combustion. The nitrogen cycle demonstrates how atmospheric nitrogen is converted into useful compounds by bacteria and then incorporated into living organisms. Students have also investigated air quality, learning about pollutants such as carbon monoxide, sulphur dioxide and particulate matter, and how these substances affect



human health and the environment.

Our discussions on climate change and global warming have been particularly thought-provoking. Students discovered that global warming is caused mainly by the increased concentration of greenhouse gases such as carbon dioxide and methane, which trap heat in the atmosphere. In Dar es Salaam, the effects are becoming increasingly evident through higher temperatures, heavier rainfall, flooding in low-lying areas, coastal erosion, saltwater intrusion and more frequent heatwaves. These changes can affect agriculture, infrastructure, water supplies and public health. Understanding these issues helps students appreciate the vital role Chemistry plays in explaining environmental challenges and developing practical solutions.

As young scientists, Year 9.5 students are already considering ways to protect the environment. Their recommendations include reducing the use of fossil fuels, planting more trees, conserving electricity and water, using public transport, recycling waste and avoiding open burning. They also suggest keeping vehicles well maintained to reduce emissions and supporting clean energy sources such as solar power. With such curiosity, enthusiasm and environmental awareness, Year 9.5 has begun its Chemistry journey with great promise, and we look forward to seeing them grow into confident and knowledgeable IGCSE chemists.

Water Cycle

