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Title: "Carbon Chronicles: Exploring Earth's Dynamic Balance"

Objective: The primary goal of this curriculum is to introduce grade 5 students to the basic concept of carbon and foster an early appreciation for the environment. Through inquiry-based activities, scientific investigations, and collaborative projects, students will develop a comprehensive understanding of carbon's role in ecosystems, climate, and human activities, cultivating a sense of responsibility, curiosity, and environmental stewardship.

Module 1: Carbon Fundamentals

• Lesson 1: Unveiling Carbon Mysteries

- Introduction to the fundamental properties of carbon and its presence in the natural world.
- Class discussion on how carbon interacts with living and non-living components of ecosystems.

• Lesson 2: The Carbon Connection

- Hands-on experiment: Investigating the connection between carbon, plants, and animals.
- Group analysis and presentation of experimental findings.

Module 2: Carbon Cycles and Systems

• Lesson 3: The Carbon Dance in Ecosystems

- Exploration of the carbon cycle within various ecosystems.
- Scientific observation: Analysing carbon flow in a miniature ecosystem model.

• Lesson 4: Human Impact on Carbon Cycles

- Discussion on human activities affecting carbon cycles and climate change.

- Case study analysis: Understanding real-world scenarios of human impact on carbon balance.

Module 3: Trees, Atmosphere, and Climate

- **Lesson 5: Trees as Climate Guardians**

- In-depth exploration of how trees sequester carbon and impact climate regulation.
- Project: Creating a "Climate Guardian Handbook" featuring facts and tips on tree conservation.

- **Lesson 6: Carbon in the Atmosphere**

- Experiment: Simulating the greenhouse effect and understanding carbon's role in climate regulation.
- Group analysis and presentation of experimental results.

Module 4: Eco-Action for Sustainable Futures

- **Lesson 7: Carbon Footprint Awareness**

- Introduction to the concept of a carbon footprint and its measurement.
- Interactive activity: Calculating and comparing personal carbon footprints.

- **Lesson 8: Eco-Action Project**

- Group project: Designing and implementing an eco-action initiative to reduce the carbon footprint at school.
- Presentation and reflection on the impact of the eco-action project.

Assessment:

- Teacher observation during discussions, experiments, and presentations.
- Participation in group projects and discussions.
- Evaluation of individual and group reflections on personal carbon footprints.

By the end of this curriculum, grade 5 students should possess a deep understanding of carbon's significance in ecosystems, climate, and human activities. The curriculum aims to inspire a sense of responsibility and empower students to take informed eco-actions in their daily lives, contributing to a more sustainable and balanced future.

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