**Lesson Plan**

**Title:**  Exploring Greenhouse Types and Structures

**Duration:** 2 hours

**Objectives:**

Students will be able to:

1. Identify and describe the different types of greenhouses, including their basic structure and materials used, demonstrating knowledge of architectural variations and their functions.
2. Analyze the advantages and limitations of various greenhouse structures in relation to different climatic and environmental conditions, applying critical thinking to assess their suitability for specific agricultural needs.

**Materials Needed:**

* Access to a variety of greenhouse types.
* Notebooks and worksheets for note-taking and sketches.
* Pens and pencils for writing and drawing.
* Smartphones or cameras for capturing structural details.
* Handouts on different greenhouse structures.
* Measuring tools for dimensions (optional).

**Instructions:**

1. **Introduction to Greenhouse Architecture (15 minutes):** Present an overview of greenhouse structures.
2. **Exploratory Walk-Through (30 minutes):**
	1. Tasks include examining construction materials, noting their durability, and transparency.
	2. Document environmental control systems like heating, cooling, and irrigation.
3. **Analysis and Discussion (30 minutes):**
	1. Form small groups to discuss the observed structures.
	2. Each group will list the pros and cons of each greenhouse type based on their observation and handouts provided.
4. **Group Presentation Preparation (30 minutes):**
	1. Class will then visit all greenhouse structure while each group share their observations and discussions regarding the greenhouse they explored.
5. **Comparative Report Creation (15 minutes):**
	1. Begin creating individual comparative reports in your Journal, integrating notes and discussions.

**Assessment:**

* **Group Presentation:** Ability to communicate findings effectively and understanding of the greenhouse structures.
* **Individual Comparative Report:** Assess the thoroughness of the report, including the use of proper scientific terminology, comparative analysis, and personal reflection on the learning experience.

Greenhouse Name/Description/Location

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| Greenhouse Structure | Description |
| 1. Framing Specification (wood, aluminum, or steel)
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| 1. Covering types (glass, polyethylene film or rigid panels)
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| 1. Type of Greenhouse (**Freestanding**: Even-span, Uneven-span, Quonset, Gothic Arch) (**Connected**: Gutter, Sawtooth, Barrel Vault, Dutch Venlo)
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| 1. Irrigation (overhead, drip, misting or hand watering)
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| 1. Heating System (steam, hot water, forced air heaters or infrared radiant heaters)
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| 1. Ventilation and Cooling System (exhaust fan & louver, horizontal air flow fans, fan & Pad coolers, retractable roof & vent and retractable side walls)
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| 1. Shading Materials (fabric, compound)
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| 1. Growing areas: Floors(weed mat, all concrete), Benches (stationary or movable) and Hanging baskets
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