

# Greenhouse Operation and Management

**Curriculum Guide:** *Greenhouse Operation and Management*

**Unit:** II. Growing Structures

**Unit Objective:**

Students will demonstrate an understanding of greenhouse structures by making an oral presentation in which they will propose a repair or improvement to the school's greenhouse and provide specifics on the materials and costs involved.

**Show-Me Standards:** 1.1, CA1

**References:**

Biondo, R. J. *Greenhouse Production*. Pearson Prentice Hall, 2004.

*Greenhouse Operation and Management*. University of Missouri-Columbia, Instructional Materials Laboratory, 2002.

Hummert International. Accessed December 3, 2003, from <http://www.hummert.com/>.

Stuppy, Inc. Accessed December 3, 2003, from <http://www.stuppy.com/>.

Students will use additional outside sources to complete this activity.

**Instructional Strategies/Activities:**

- Students will engage in study questions in lessons 1 through 3.
- Students will complete AS 2.1, Plan Your Own: Part I; and AS 2.2, Plan Your Own: Part II.
- Additional activities that relate to the unit objective can be found under the headings "Other Activity and Strategy" and "Unit II Activity" in the following locations: p. 47, p. 74, and pp. 92-93.

## **Greenhouse Operation and Management**

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### **Performance-Based Assessment:**

Students will be given the scenario that the department's instructors want to make repairs or improvements to the school's greenhouse. Students will work individually or in groups to develop a plan to present to the school board (classmates) to convince the board that the greenhouse needs these changes. They will present their plan in the form of a 5-minute sales pitch that will include a visual aid, such as a diagram of the proposed changes and where in the greenhouse they will be made, a list of materials, and a price sheet that provides the overall cost.

Assessment will be based on the overall content and presentation of the plan.

### Unit II—Growing Structures Instructor Guide

The instructor should assign the performance-based assessment activity at the beginning of the unit. Students will work toward completing the activity as they progress through the unit lessons. The assessment activity will be due at the completion of the unit.

1. Present the following scenario to the students: The department's instructors want to get approval from the school board to make repairs or improvements to the school's greenhouse.
2. Have students evaluate the greenhouse to determine what repairs or improvements to make or suggest changes for students to consider, such as replacing a gravel floor with a cement floor or installing an overhead sprinkler system.
3. Have students work individually or in groups to develop a plan that will convince the school board that the changes should be made.
4. Students may use material in the unit and will need to use additional outside sources to prepare their plan.
  - a. Several resources are listed in the references section of this assessment activity that contain information on greenhouse structure options, materials, and costs.
  - b. Students must provide a complete bibliography of their sources along with their presentation.
5. Have students present their plan to the school board (classmates) in the form of a sales pitch. Presentations should be 5 minutes long.
  - a. The presentation will include the following elements:
    - Visual aid, such as a diagram of the proposed changes (This should show where in the greenhouse the changes will be made and include a picture of the materials, if possible.)
    - List of materials needed to make the improvement or repair
    - Price sheet displaying the total cost
  - b. For example, if the student proposes installing an overhead sprinkler system, the presentation should include a picture of the system, where it would be installed in the greenhouse, a list of the materials required, and a price sheet that provides the total cost.
6. Remind students who are working in groups that all members must participate in the presentation in some way.

## **Greenhouse Operation and Management**

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7. The final assessment will be based on the overall content and the presentation of the plan.
8. **ADDITIONAL ACTIVITY:** For further review, an additional unit-level activity, *Greenhouse Portfolio*, is included on pp. 92–93 of the *Instructor Guide*. For this activity, students will work in groups to assemble a portfolio that includes information about all the structural and internal mechanisms needed to build a new commercial greenhouse. Students will then give their portfolio to the instructor and receive another group's portfolio to critique using questions included in the activity. Answers will vary.

### Unit II—Growing Structures Student Handout

1. Consider the following scenario: The department’s instructors want to get approval from the school board to make repairs or improvements to the school’s greenhouse.
2. Your instructor may suggest repairs or improvements or may instruct you to evaluate the greenhouse and decide what repair or improvement is needed most.
3. Develop a presentation that will convince the school board that the changes should be made.
4. You may use material in the unit and will need to use additional outside sources to prepare your presentation. You must provide a complete bibliography of your sources along with your presentation.
5. Present your plan to the school board (classmates) in the form of a sales pitch. Presentations should be 5 minutes long.
  - a. The presentation will include the following elements:
    - Visual aid, such as a diagram of the proposed changes (This should show where in the greenhouse the changes will be made and include a picture of the materials, if possible.)
    - List of materials needed to make the improvement or repair
    - Price sheet displaying the total cost
  - b. For example, if you were proposing to install an overhead sprinkler system, the presentation should include a picture of the system, where it would be installed in the greenhouse, a list of the materials required, and a price sheet that provides the total cost.
6. If you are working in a group, be sure that all group members participate in the presentation in some way.
7. Your final assessment score will be based on the overall content and the presentation of your plan.



# Greenhouse Operation and Management

## Unit II—Growing Structures Scoring Guide

Name \_\_\_\_\_

| Assessment Area      | Criteria  | 0 Points       | 1 Point         | 2 Points       | 3 Points       | 4 Points           | Weight | Total |
|----------------------|---|----------------|-----------------|----------------|----------------|--------------------|--------|-------|
| Content of Plan      | <ul style="list-style-type: none"> <li><input type="checkbox"/> Includes all required elements</li> <li><input type="checkbox"/> Facts are accurate</li> <li><input type="checkbox"/> Visual elements emphasize and clarify key points</li> <li><input type="checkbox"/> Well organized</li> </ul>    | 0 criteria met | 1 criterion met | 2 criteria met | 3 criteria met | All 4 criteria met | X 17.5 |       |
| Presentation of Plan | <ul style="list-style-type: none"> <li><input type="checkbox"/> Holds audience interest</li> <li><input type="checkbox"/> Speaks clearly and uses correct grammar</li> <li><input type="checkbox"/> Speaks in a persuasive manner</li> <li><input type="checkbox"/> Maintains good posture</li> </ul> | 0 criteria met | 1 criterion met | 2 criteria met | 3 criteria met | All 4 criteria met | X 7.5  |       |
| <b>TOTAL</b>         |   |                |                 |                |                |                    |        |       |

Final Assessment Total \_\_\_\_\_/100 pts.

Comments:

