INTEGRATED PEST MANAGEMENT

Unit 1 Lesson 3
Dormant Demons

Focus Areas: Pest Identification, Science, Math

Focus Skills: Observing, measuring, predicting, recording data, critical thinking

Level of Involvement: AVERAGE
Unit 1 Lesson 3: Dormant Demons

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Objectives

* To identify the parts of a plant life cycle
* To recognize that different habitats harbor various seeds
* To recognize that mulching is an IPM method used to control weeds
* To apply knowledge gained to weed management

Essential Questions

* What life cycle adaptation aids weeds to survive in a variety of locations?
* How can IPM tactics diminish the success rate of weeds?

Essential Understandings

* Seeds can lie dormant until environmental conditions are optimum for germination.
* Mulching and removing weeds before they produce seeds can diminish the number of weeds that germinate in a given area.

Background

We tend to think of weeds only when they show up as big vigorous plants swallowing up our gardens. However, weed seeds are like little time capsules, living in the soil over long periods of time, waiting for just the right conditions to germinate.
Background (continued)

From a weed management point of view, one of the best strategies to prevent long-term weed infestations is not allowing the weeds in your farm and garden to go to seed. Mulching before seeds can germinate is another option (but does not work as well on plants already growing that send out runners or rhizomes).

Vocabulary

**competitive plants**  
plants that crowd out others over time

**dormant**  
inactive state of a plant

**germinate**  
a small plant that starts to grow from a seed in the soil

**seedlings**  
small plants starting to emerge above the soil

Challenge  
Reduce the germination rate of weeds

Logistics  
**Time:** 10 minutes a day over the weeks of observation  
**Group size:** 2 to 35  
**Space:** Room for flats to be kept in a sunny location
Unit 1 Lesson 3: Dormant Demons

Materials

shovel or trowel for digging up soil
flats to put the soil in
three types of mulch:
- organic residue: grass clippings, leaves, barks, etc.
- plastic
- paper
- participant’s choice

Handout 1: Data Sheet for Plant Germination and Growth *
Handout 2: Lab Report Form *
Assessment for a Lab Report *

* single copy provided

Preparations

1. Collect soil from four to six different locations.

2. Fill up two flats with each kind of soil. One flat will be watered only. The other will be watered and then covered with some kind of mulch (grass clippings, plastic, paper or one of the participant’s choices). Label each flat as to the kind of soil and date of watering.

3. Place flats in an area that receives sunlight.
Activity

Involvement

1. Teams make a data sheet for each flat. Have the teams form hypotheses of which flats they think will:
   a) germinate first
   b) have the most plants
   c) have the most different kind of plants
   d) have the most competitive plants

2. Keep flats moist but not soggy. Wait for seeds to germinate.

3. Once seedlings start to emerge, have the teams begin to collect data.

4. Continue checking flats and recording data daily for two weeks.

5. At the end of the observation period, compare the original hypotheses to the actual results and draw conclusions.

6. Have each team member complete a lab report for assessment.

Assessment

Each team hands in data sheets and lab reports for evaluation.

Follow Up

Have students discuss the management implications of their observations or experiments.
Unit 1 Lesson 3: Dormant Demons

Data Sheet for Plant Germination and Growth

Name: ______________________________

<table>
<thead>
<tr>
<th>Date</th>
<th># of Plants</th>
<th>Height in Centimeters</th>
<th>Description of New Growth, Color &amp; Pattern</th>
<th>General Condition of Plants in flat # ____ Description of Appearance</th>
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Lab Report Form

Heading: _______________________________________________________

Lab Report Title: _________________________________________________

Objective: _______________________________________________________

Materials: _______________________________________________________

Procedure: (what you did) 1. _______________________________________

____________________________________________________________________

2. __________________________________________________________________

____________________________________________________________________

3. __________________________________________________________________

____________________________________________________________________

4. __________________________________________________________________

____________________________________________________________________

5. __________________________________________________________________

Results: (what you observed / discovered) ____________________________

____________________________________________________________________

____________________________________________________________________

Continue on reverse side if necessary

Conclusion/Further Questions: (what you learned or want to learn)

____________________________________________________________________

____________________________________________________________________
Assessment for a Lab Report

1. Title clearly reflects purpose. 10 points ______

2. Objective explains purpose. 10 points ______

3. Material list is accurate and complete. 10 points ______

4. Procedure is accurate, clear and complete. 20 points ______

5. Results are detailed, clear and relevant. 20 points ______

6. Conclusion and/or Question reflects an understanding of the lab's purpose. 20 points ______

7. Report is neatly done. 5 points ______

8. Report is mechanically correct. 5 points ______

Comments: Total Points ______