

Diagnosing Plant Problems Sorting Exercises

Time: 25 Minutes

Supplies:

- For each small group 3 envelopes with photos sets for Step 1, Step 2a, and Step 2b.
- Note: Though the photos for 2a and 2b are the same, the descriptions on the back of each photo are different. Students will sort the photos using different criteria for 2a and 2b.

Learning Objectives:

- **Be familiar** with the basic steps of the systemic approach to diagnosing plant problems
- **Use the five step approach** to determine if example plant problems are caused by abiotic or biotic factors.
- **Recognize** the importance of accurate, early detection of introduced and invasive pathogens.

Directions:

Break into small groups of not more than 5 people. Each team will collectively practice the first two steps of the five-step systemic approach by observing and sorting photos.

Step 1: Determine if a problem exists.

Open the **Step 1 envelope** of photos and sort the photos into two different groups based on the plant appearance:

Normal appearance

Don't be fooled; plants are cool. Sometimes plants behave in bizarre and fascinating ways.

Abnormal appearance

Are you seeing a symptom or a sign?

- **Symptoms** are changes in the appearance or growth of the plant in response to a damaging factor.
- **Signs** are visual evidence of the damaging factor.

STOP AND WAIT FOR FURTHER INSTRUCTION after your team has sorted these photos.

Step 2. Look for patterns.

Open the **Step 2a envelope** of photos and sort the photos into groups based on pattern of damage at three levels:

Plant community

- Is the damage on more than one plant?
- Is the damage on more than one plant species?

Individual plant

- Is the damage on the entire plant or only some plant parts?
- Is the damage on certain age of growth?

Specific plant part(s)

- Describe how the plant part appears damaged.

STOP AND WAIT FOR FURTHER INSTRUCTION after your team has sorted these photos.

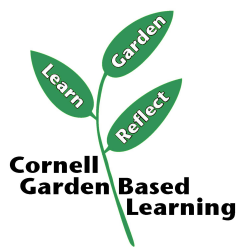
Open the **Step 2b envelope** of photos and sort the photos into two groups based on observations of:

Non-uniform damage patterns

- Non-uniform, expanding damage patterns are usually caused by living factors, because of movement of feeding sites, life cycles, and population increases and decreases.

Uniform damage patterns

- Uniform, non-expanding damage patterns are usually caused by non-living factors such as chemical injuries, temperature



References: Cornell Plant Disease Diagnostic Clinic

<http://plantclinic.cornell.edu/>

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