

THE HUNTINGTON Library, Art Collections, and Botanical Gardens



Conservatory Venus Flytrap Demo



Objectives

The amount of time a visitor spends with you at this station is ultimately up to him/her, and visitors may come and go in the midst of and activity. Therefore we cannot expect or require that every visitor comes away with the same knowledge or experience. However, a given visitor could be expected to come away with some combination (though not *all*) of the following objectives:

After having participated in the Venus flytrap station, the visitor can

- Discuss the functions of a Venus flytrap leaf (photosynthesis as well as trapping and digestion of insects).
- List characteristics of the flytrap's natural habitat, particularly the low nutrient content of bogs.
- Relate the characteristics of the bog environment to the adaptation for carnivory.
- Describe mechanisms and steps involved in the closing of a flytrap leaf, for example:
 - o Colors, scents, and nectar attract insects to the leaf surface;
 - hairs act as triggers and when one is touched twice or two are touched in close succession, the trap closes (by transferring water out of the cells in the leaf);
 - the trap closes most of the way, but the teeth leave some room for smaller insects to escape;
 - digestive juices are secreted;
 - the plant absorbs important nutrients from the insect; the trap opens again in 4-10 days.
- Discuss why triggers need two touches in order to cause the trap to close.
- Practice triggering flytrap under a facilitator's supervision.

Materials

- Many Venus flytraps
- Toothpicks, probes, or paintbrushes for triggering

- Hand lenses
- Videoscope



Procedure

Your presentation will vary based on a variety of factors, but you can use the following as guidelines:

- A. If your group is small, you can encourage each visitor to trigger one flytrap.
 - Use this experience to help key out some of the features of the flytrap. You can ask how they made it close. How might the leaf "know" it has an insect? You may ask for ideas on the functions of each part.
- B. Much of the facilitation of this station will involve fielding visitor questions. People are often very curious about these unique plants.
 - Some questions may necessitate direct answers, but try encouraging the visitor to make his/her own conclusions when possible and as time permits. You can respond to questions with your own, such as "How might we find that out?" or "What do you think about that?"
- C. If you group is very large, use only one flytrap, placing the rest out of reach behind the demo table.
 - Demonstrate the triggering and closing of a leaf in front of the videoscope so that it is displayed on the monitor.
 - Follow the demo by asking open-ended questions such as "What did you notice?"
 - Repeating the demo can help reinforce the discussion.

Tips and tricks

- Use open-ended questions, but don't play "guess what I'm thinking". To help the visitor discover the functions of the teeth, for instance, you might try asking "Can you predict the function of these?" and follow up with "What makes you say that?", continuing to facilitate based upon the responses. If the visitor is way off base, you still have the opportunity to understand where the answer comes from. You can bring the conversation back in the right direction by saying something like "that is a good conclusion, it makes sense. The other way to look at it is _____, and in fact that is what scientists think the function is."
- Open-ended questions can be used even if you would like the direct the learning towards a particular objective. The process would vary for each visitor, but for instance, to help the visitor learn that the leaf still undergoes photosynthesis, you may ask
 - "Tell me about the colors you see."
 - "How do these colors compare to other leaves?"
 - "What do you know about the colors of leaves?"



"What could we guess about the colors in this leaf?"
You can then follow up by using some of the information the visitor provided with facts you supply about the plant. For example you may say, "You noticed that the leaf was green and you know that other green leaves make food. In fact, this leaf also makes its own food. It eats the insects to get the important nutrients that many other plants would just take from the soil."

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- Encourage the visitors to explore the other exhibits about carnivorous plants. If they have already visited those exhibits, encourage them to draw upon the information they have already learned.
- There are many options; be flexible to allow the process to vary based on time, size of the group, visitor interest, etc. Challenge yourself as a facilitator to try new directions. Share "notes" with other facilitators.