What Makes an Orchid an Orchid?

Smithsonian Gardens

Vocabulary

- Sepals
- Petals
- Column
- Actinomorphic
- Zygomorphic

Age/Grade level: Elementary students

Learning Goals:

- Learn various parts of an orchid
- To foster a fun learning activity that expands children's knowledge and understanding of the parts of an orchid and flower symmetry.

What you'll need:

- Orchid Diagram
- 2 Daffodil Images
- Orchid Image
- Create Your Own Flowers activity sheet

Preparation: Use scissors to cut the orchid and daffodil images in half along the dotted lines.

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Activity:

Take a look at the diagram of the orchid.

- There are over 25,000 members of the orchid family, but all orchids have:
  - **3 sepals**
  - **3 petals** with a fancy one called the lip or labellum
    The lip or labellum is usually very colorful or has a special shape to attract insects for pollination.
  - **A column**
    In most flowers the male and female parts are separate. However, in orchids they are combined into the column.

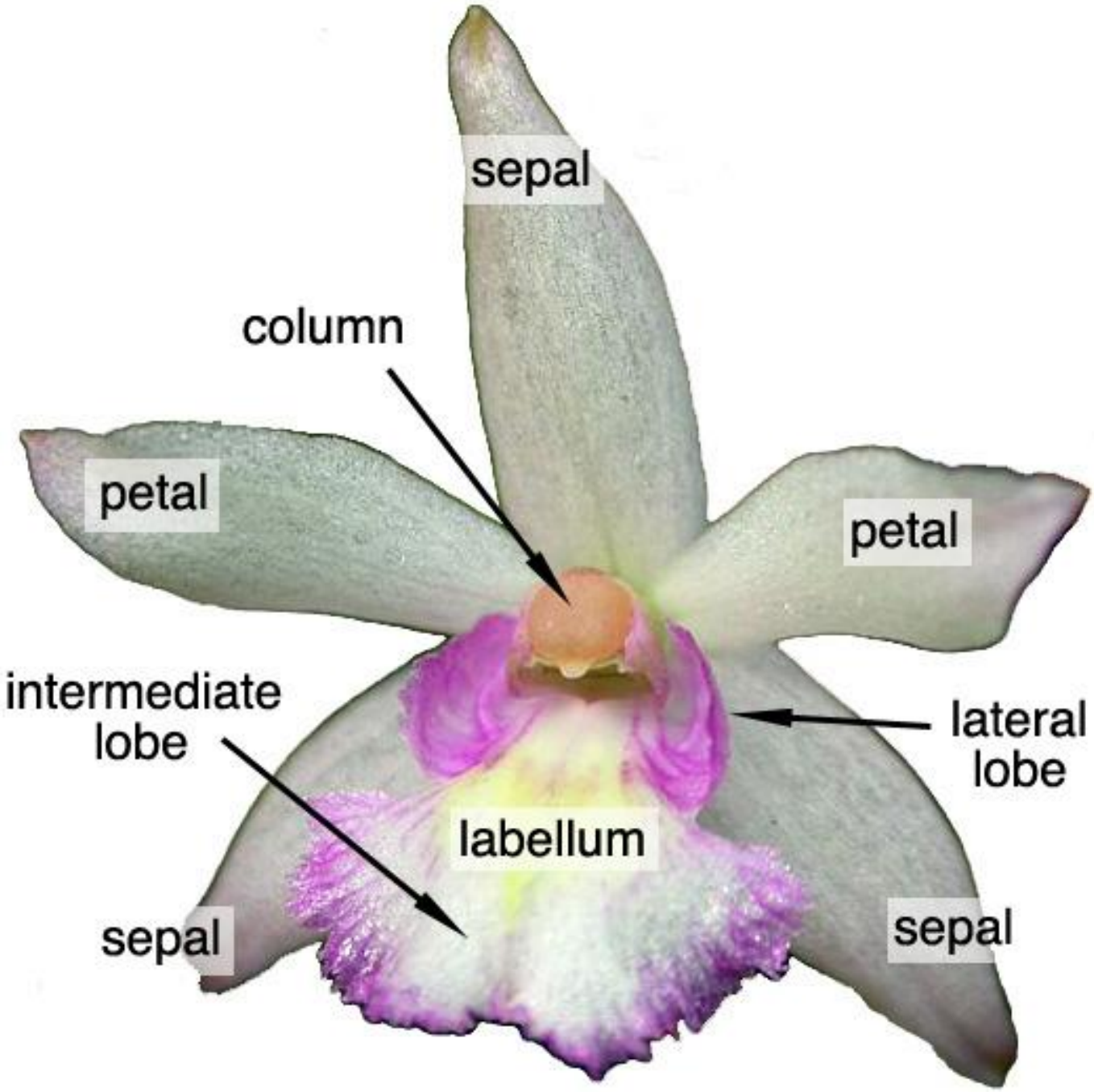
Check out the four daffodil pieces.

- Could you reconstruct two complete daffodils from these pieces?
- What do you notice about how a daffodil may be cut in two?
- Daffodils are like most flowers- actinomorphic. This means they can be cut in half in any direction and the two halves are mirror images of each other.
- Can you think of another flower that is actinomorphic?

Now check out the orchid pieces.

- Could you reassemble these two pieces into a complete orchid?
- Did you notice that the orchid is similar to the human face in that it can only be divided in two mirror image halves, unlike the daffodil?
- Orchids may only be cut in half vertically (through the dorsal sepal, splitting the labellum in half) to produce mirror images- this is called zygomorphic or bi-laterally symmetrical.

Use what you've learned to complete the Create Your Own Flowers Activity Sheet.


sepal
column
petal
petal
intermediate lobe
lateral lobe
labellum
sepal
sepal

CREATE YOUR OWN FLOWERS

In the space below create your own flowers. Make one flower actinomorphic, meaning it can be cut in half in any direction and the two halves are mirror images of each other. Make one flower zygomorphic, meaning it is bi-laterally symmetrical can only be cut in half vertically to produce mirror images.