

Botany 101

For some, high school biology class, with the usual chapter on botany, is a fond memory of learning about the natural world. Others may have had the unsettling experience of being jolted awake by a question from the teacher.

Chances are, terms like “monocot” or “calyx” didn’t mean much back then. But now that you’re a gardener, it can’t hurt to know more about plant parts and types. Here’s a chance to refresh your memory. Then you can take a quiz online. It’s for extra credit only — I promise to make it interesting enough that you won’t fall asleep!

Botanically speaking, flowering plants are divided into two categories: *monocotyledons* (MAH-noh-kaht-ihl-ee-dun) and *dicotyledons* (DIE-kaht-ihl-ee-dun). Most people just say “monocot” or “dicot” for short.

If you’ve ever used a selective herbicide, you’ve targeted plants based on whether they were monocots or dicots. For example, a broadleaf weed killer for the dandelions (dicots) in your lawn won’t hurt your grass (a monocot). Read on to find out what makes these two groups distinct.

Leaves — A *cotyledon* is the first set of leaves a seed sends up. It nourishes the growing plant until the *true leaves* emerge. The cotyledon usually looks different from the true leaves, which are the leaves you’ll recognize on a mature plant.

Take a look at the single iris cotyledon in the illustration at right. It’s a good example of a monocot cotyledon — most look like a blade of grass. Then look at

the true leaf, and you’ll see parallel veins running its length. This is another monocot characteristic.

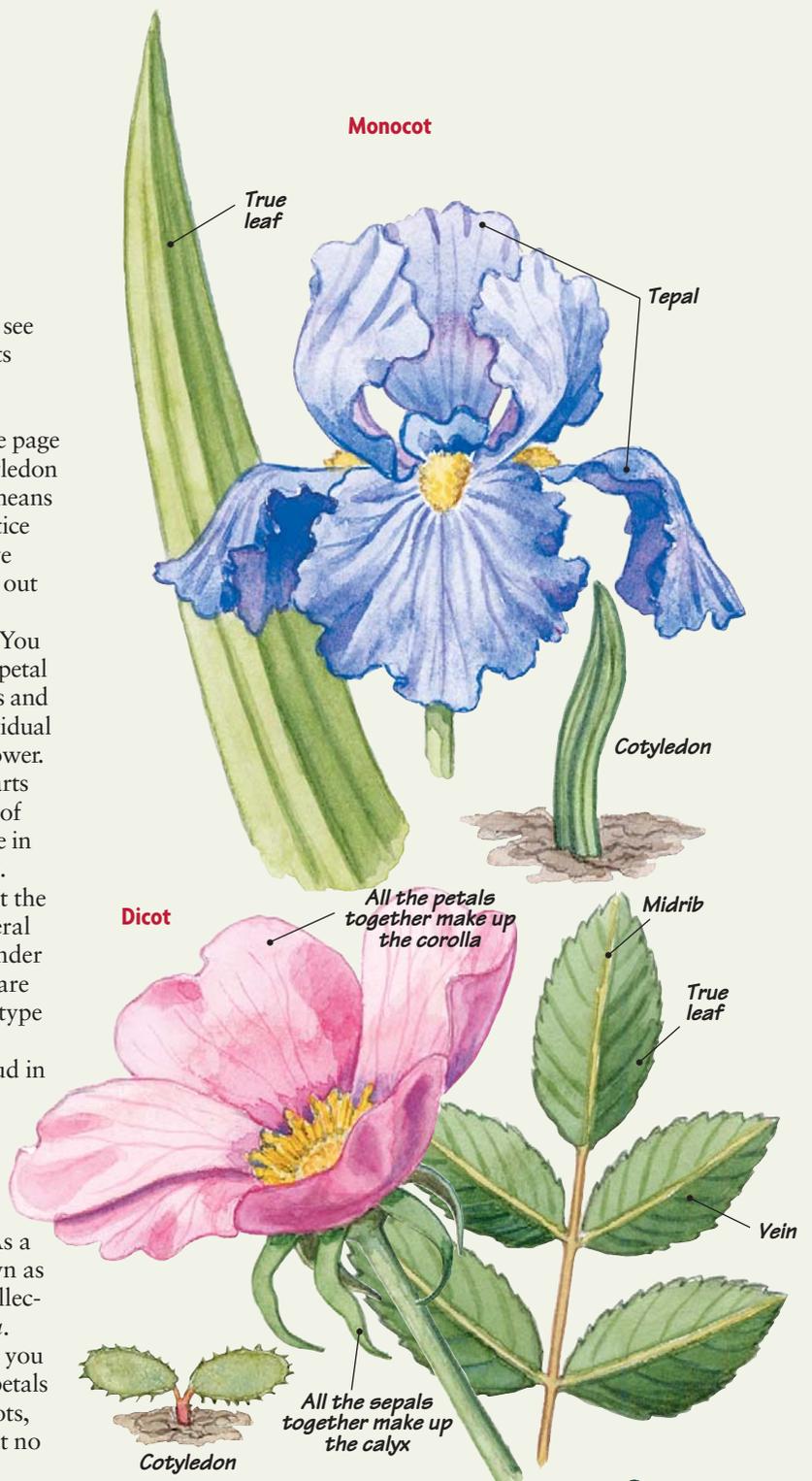
Now move down the page to the rose. See the cotyledon with two leaves? This means the plant is a dicot. Notice how the true leaves have small *veins* that branch out from a *midrib*?

More than petals — You probably know what a petal is, but how about sepals and tepals? They’re all individual parts that make up a flower. On a monocot, these parts are usually in multiples of three; on a dicot, they’re in multiples of four or five.

Take another look at the rose and you’ll see several small green “leaves” under the pink petals. Those are the *sepals*. A sepal is a type of leaf that starts out enfolding the flower bud in a protective cover. It’s usually green, but not always. As the bloom opens, the sepals curl under the *petals*, or in some cases, drop off. As a group, sepals are known as the *calyx*. Petals are collectively called the *corolla*.

Generally, on dicots, you can tell the sepals and petals apart. But with monocots, they look so similar that no one tries to distinguish between them — they’re just called “*tepals*.” Of course, for every rule there’s an exception. For example, even though magnolias and anemones are dicots, they have tepals, too.

Want to see if this mini botany lesson stuck? Check out the Online Extra and take our quiz. Some lucky student will get a prize, which sure beats an afternoon in the vice-principal’s office! □



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WHICH PLANT IS WHICH?

Monocot

Amaryllis
Lily
Orchid
Ornamental grass
Palm
Rush
Sedge
Spiderwort

Dicot

Aster
Blueberry
Clematis
Columbine
Lupine
Oak
Snapdragon
Sunflower