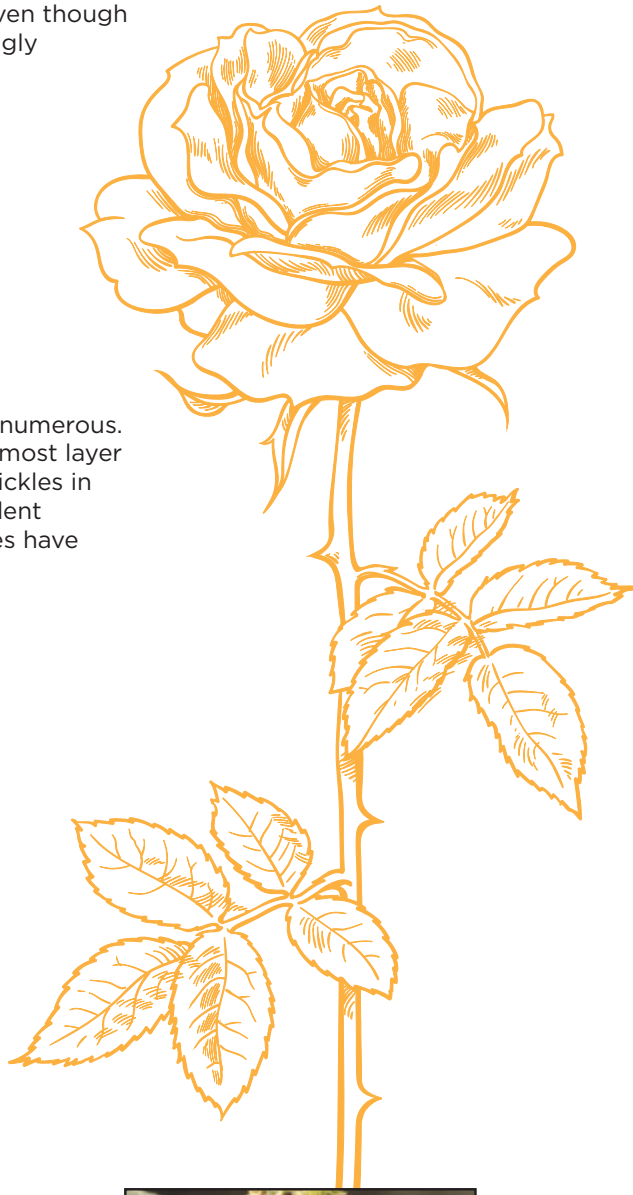
Prickles, Thorns, and Spines, Oh My!

FRIENDS OF SANA
SAN ANTONIO NATURAL AREAS

Botanists (experts in the scientific study of plants) use three different words for sharp things on plants— **prickles, thorns,** and **spines.** Yes, they can all hurt if you brush against a plant with defense mechanisms like these! But, do you know the difference between the three?

In general, prickles, thorns, and spines provide protection from hungry animals but they also function to shade plants from the extreme Texas heat. Even though spines, thorns and prickles serve a similar purpose, they have surprisingly different structures.



Let's take a closer look...

PRICKLES

Prickles are woody outgrowths from a plant's skin or bark and can be numerous. Similar to your hair, prickles are derived from the epidermis (the outermost layer of the plant) and do not have vascular plant tissue. You'll often find prickles in irregular patterns on the plant and they're fairly easy to remove. Excellent examples of prickles are displayed on roses. Although many think roses have thorns, they're actually prickles!

Southern Dewberry
Rubus trivialis

Lime Prickly Ash
Zanthoxylum hirsutum

There are also many types of seeds or seed cases that have prickle-like structures allowing them to attach to animal fur and helping to disperse the seeds.

Jimsonweed
Datura wrightii

Common Hedge Parsley
Torilis arvensis

Canada Cockleburr
Xanthium strumarium L. var. canadense

THORNS

Simply put, thorns are modified branches or stems and typically end in a really sharp point. Thorns originate from the axillary bud where the leaves or branches arise. Many plants convert a woody stem into a thorn, and even unrelated plant families share this adaptation. Thorns can also be branched or un-branched. Look for these thorns as you explore nature!

Saw Greenbriar
Smilax bona-nox

Honey Mesquite
Prosopis glandulosa

Retama
Parkinsonia aculeate

Bluewood Condalia
Condalia hookeri

Catclaw Acacia
Senegalia greggii

SPINES

Leaves are an important part of nearly every plant—this enables the plant to produce food that is essential for growth and survival. If you've ever come into close contact with a cactus plant, you might have wondered how it's able to survive without leaves. Spines are sharp pointed structures that are actually modified leaves, having evolved over time to help the plant survive.

First: The plant is able to collect and store water at the base of the plant where it is absorbed by the shallow roots.

Second: Spines help cacti reduce transpiration (the loss of water from stems and leaves in the form of vapor water), thus minimizing water loss.

Third: Propagation: Spines with a small part of the cactus tissue attached, can be blown around by wind or animals may carry them on their fur which could fall off in another location, then grow into new plants.

Prickly Pear Cactus
Opuntia engelmannii

Huisache
Vachellia farnesiana

Spiny Hackberry
Celtis ehrenbergiana

Tasajillo
Cylindropuntia leptocaulis

Spanish Dagger
Yucca treculeana