

What is a Cactus ?

A Cactus is a Succulent that has groups of small bumps all over the skin called areoles. This is where the spines grow.

A Succulent is a plant that has a way to store water so it can keep growing without getting any rain for a long period of time, sometimes over a year or more.



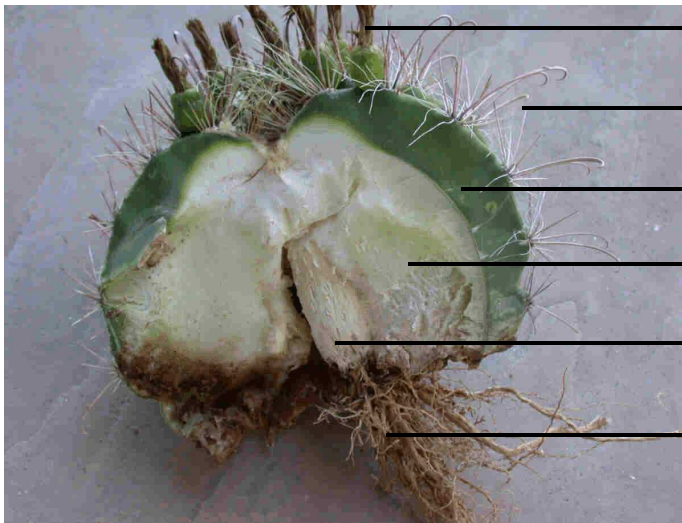
Barrel Cactus Spines

How is a Cactus Different from Other Plants ?

A Cactus is different from other plants in several ways. Some of these are:

- It has spines instead of leaves to protect itself, provide shade and help collect water.
- It has a protective wax like skin to keep moisture from evaporating.
- Its skin is green to promote photosynthesis because it has no leaves.
- It can store lots of water like other succulents and grows for months without any extra water.
- It likes to grow in the desert where many other types of plants can not survive.
- It holds its breath during the day and breathes in at night to conserve water.

What Makes Up a Cactus ?



Inside a Barrel Cactus

Flower/Fruit

Spines on areoles

Skin

Storage

Stem

Roots



Saguaro Structure



For more information about Cactus and other Succulents, see our web site: www.TucsonCactus.org. There is information about our School Grant Program, offering grants to teachers who want to do a project about cactus and succulents in the classroom or to possibly build a cactus garden. We also award cash prizes to students for worthy SARSEF science fair projects involving cactus and succulents.

Let's Build a Model Cactus !

Here are the steps..

1. **DIRT** - First, we need some dirt for the Cactus to root and grow.
Get a patch of dirt for your cactus to grow on.
(use a brown styrofoam square)
2. **ROOTS** - Water is needed for any plant to grow, we need a way to get water up into the cactus
Get some Roots and a stem for the water to get up into the cactus.
(use the nylon rope and spread the ends for the roots, about 2 inches)
3. **STORAGE** - Need to be able to store water in the cactus
Get a material to be the center part of the cactus and store water
(Use two pieces of a sponge, place the stem in the middle with the roots on bottom, secure sponge pieces together with a rubber band)
4. **STRUCTURE** - Need a means to support the cactus to stay up
Get two items to act as support ribs to hold the sponges so they do not fall over.
(Use two pieces of copper wire in a "U" shape to go up and over the sponges, poke the ends into the dirt base)
5. **SKIN** - Need an outside green covering to prevent water loss and provide photosynthesis
Get an item to act as skin to cover the cactus.
(Use a green balloon and stretch it over the sponges and support structure)
6. **PROTECTION** - Need a way to provide physical protection of the cactus
Get items to act as spines to keep animals away from the cactus and to provide shade for the skin of the cactus.
(Use 3 or 4 toothpicks to push through the sponges to act as spines)
7. **FLOWER & FRUIT** - Need a way for the cactus to reproduce and grow new baby cacti.
Get a item to act as the flower, put it on top of the cactus. It will be replaced with a fruit that will have seeds after the flower goes away, these also provide food for animals.
(Use a toothpick with the colored end, push it in the top of the cactus)

Good Job! You now have a model cactus...

It may not look exactly like a cactus you see in the desert but it has all the important parts. With your newly gained knowledge, you can now explain how a cactus works to your family and best friend.

