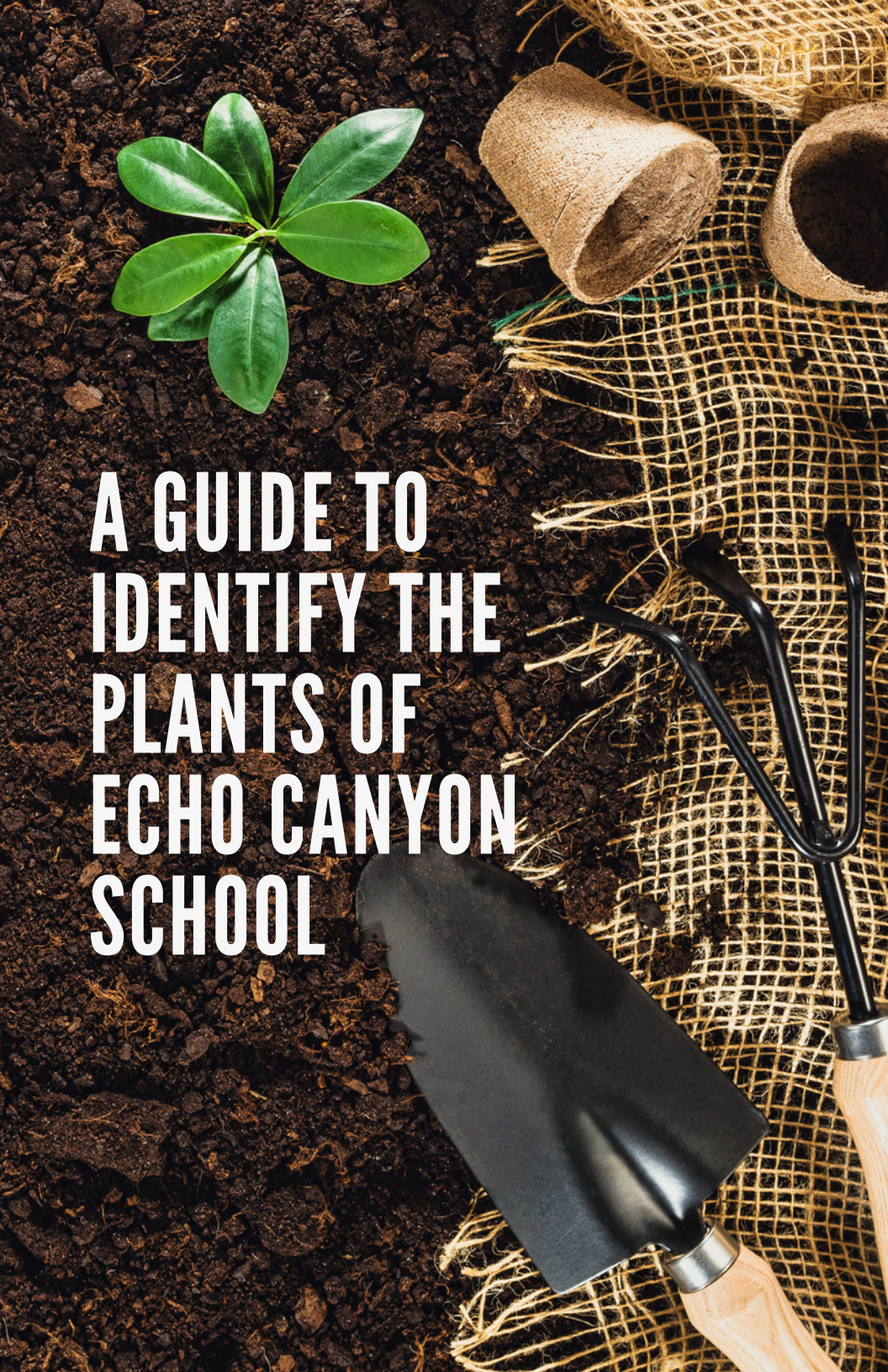

A GUIDE TO IDENTIFY THE PLANTS OF ECHO CANYON SCHOOL

ECS LANDSCAPE GUIDE

In this book students will learn how to identify plants by some of the observed characteristics. The specific plants of the campus are listed with pictures, but students can be given blank work sheets to fill in as they walk around the campus. Botany involves the scientific classification of plants into categories of similar methods of reproduction, including the type of seeds and flowers. These groups are given formal names, the species are given more specific formal names, and then they have nicknames or common names that are easier to remember but not accurate enough to use for specifying plants in landscape design.

Naming Plants:

Plants are organized by groups with similar characteristics, into scientifically defined categories. All plants belong to the Kingdom Plantae.

Plants are divided into families such as Agavaceae, Asteraceae, Cactaceae , Fabaceae (Leguminoseae), Liliacae, Rosaceae, Ulmaceae, Verbenaceae. There are approximately 620 plant families. Understanding Latin is important in botany and many sciences, but in some cases, you may recognize familiar words in these family names (Agave, Aster, Cactus, Legume, Lily, Rose, Elm, Verbena)

Each family is divided by how they reproduce, what kind of vascular system they have, what the leaves and flowers and seeds look like after careful observation by the first discoverer of the plant. Each level of division is part of the plant hierarchy.

The Genera is always a Latin name that is capitalized. There are more than 16,000 Genera of plants. Genera in Arizona include *Acacia*, *Aloe*, *Agave*, *Cereus*, *Prosopis*, *Opuntia* and *Phoenix*.

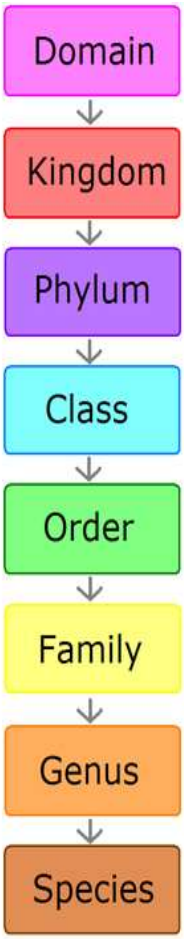
The second name is not capitalized, it is the species name. This name may represent the place where it came from such as *arizonica*, *chinensis*, *sibirica* or the person who discovered it *freemontii*, *weberii, paryii*. If you discover a new species, you can name the plant after yourself! The scientific name is italicized or underlined. There are almost 4,000 native plants in Arizona. Visiting arboretums and botanical gardens can be a great place to see the many species of plants, native and non-native that grow here. *Carnegiea gigantea* is the name of the Saguaro, gigantic is a good description of our tall cactus!

Scientific names often from Latin or Greek words, add meaning about the plant's description, for example:

- americana = of America – Fraxinus americana (white ash)
- baccata = berry bearing – Taxus baccata (common yew)
- micro = little, small – Antennaria microphylla (littleleaf pussytoes)
- officinalis = medicinal – Rosemarius officinalis (rosemary)
- repens = creeping, crawling – Mahonia repens (creeping Oregon grape)
- undulata = wavy – Quercus undulata (wavyleaf oak)
- variegatus = variegated – Miscanthus sinensis 'Variegatus' (variegated Japanese silver grass)
- vulgaris = common – Syringa vulgaris (common purple lilac)
- alba = white – Quercus alba (white oak)
- niger = black – Pinus nigra (black pine)
- rubra = red – Acer rubrum (red maple), Quercus rubra (red oak)
- sanguineus = blood-red – Geranium sanguineum

Plants also have common names, many plants have the same common name, there are 14 species of palm trees. Thousands of plants are called daisy. Many plants are called Bird of Paradise. How many different species of bean, potato tomato or apple can you think of? Some common names have historic, cultural or religious significance. The name Marigold, given to several species of Asteraceae with yellow or orange flowers, comes from “Mary’s Gold,” in honor of Jesus’ mother Mary. Other common names refer to a plant characteristic, such as Butterfly Bush, a name used for many different plants that attract butterflies. The Popcorn Cassia flower smells like buttered popcorn. Just like nicknames for people, there may be many Roberts who are called Bob, or Timothies called Tim. A person’s full name helps identify them individually. Because common names of plants may be used to describe many different plants, it is important to have formal names for plants. This is why the scientific name is important, to be more specific.

If you see something like ‘this’ it is a more specific variety, often a hybrid. A hybrid is a plant created by combining characteristics or modifying the genetic structure to get new plants that would not be found in nature. Sometimes this is done to change flower color, control size, reduce seed litter, increase flower season or size, resist disease or reduce pollen. Olive trees have a lot of pollen, which is an allergen; they also produce a lot of seeds. The ‘Swan Hill’ variety is a hybrid that does not produce pollen, and therefore does not make seeds. It is the only variety allowed by some cities, to reduce the amount of pollen in the air and help people with allergies and asthma. Other varieties you might see include: Lantana ‘gold mound’, ‘compacta’ and ‘dwarf’ mean smaller varieties or ‘red’ these are descriptions about the specific plant. Heirloom plants are old varieties that have been saved and shared between generations of gardeners.

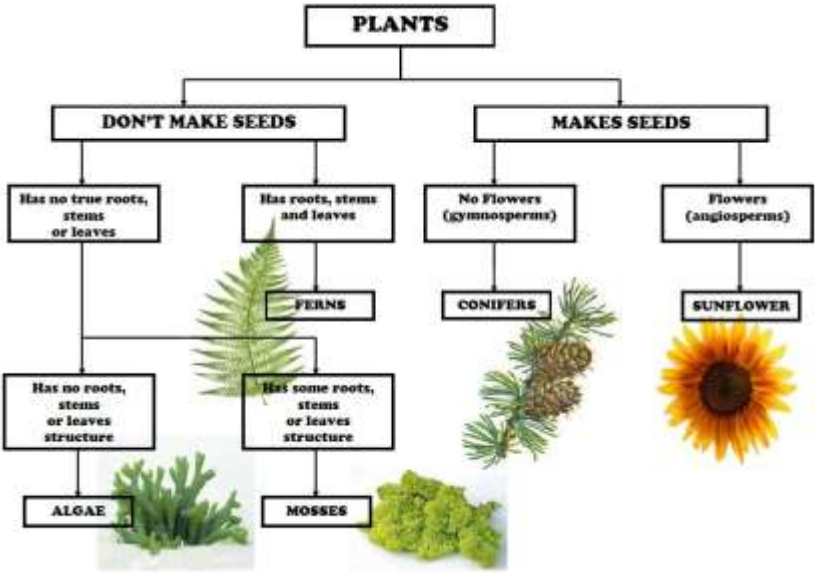


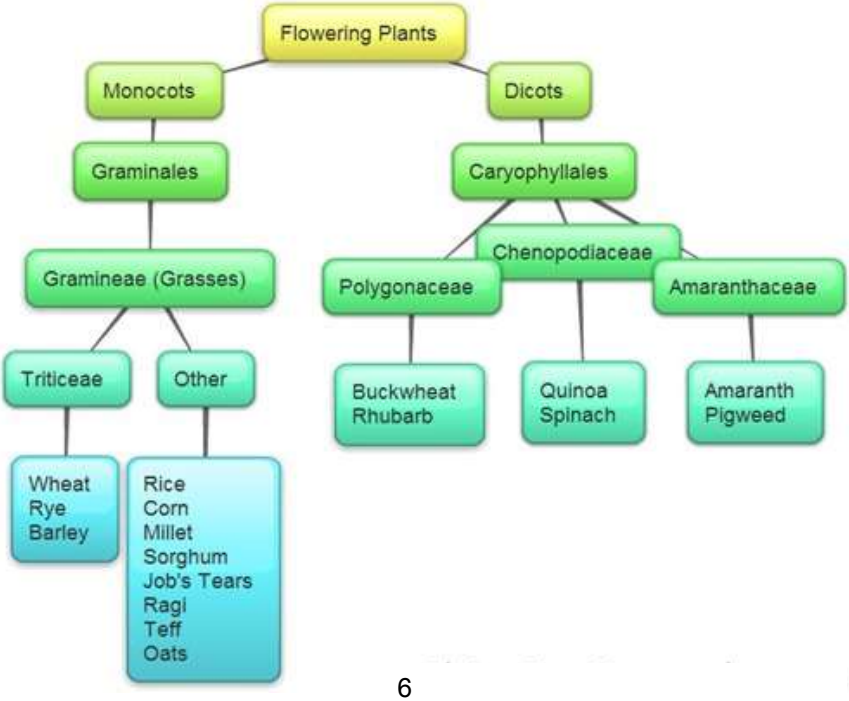
Kingdom Plantae is organized by characteristics of the plants, starting with how the plant reproduces. Does the plant make seeds or not? If it makes seeds does it have flowers that get pollenated to make the seed? If it does not make flowers, it is in the gymnosperm phylum, such as the pinaceae family, which has many species. These are conifers, or pine trees.

If the plant produces a flower, it is grouped in the phylum of angiosperm. What type of seed does the flower produce, is it a monocot or a dicot? Here are some of the differences:

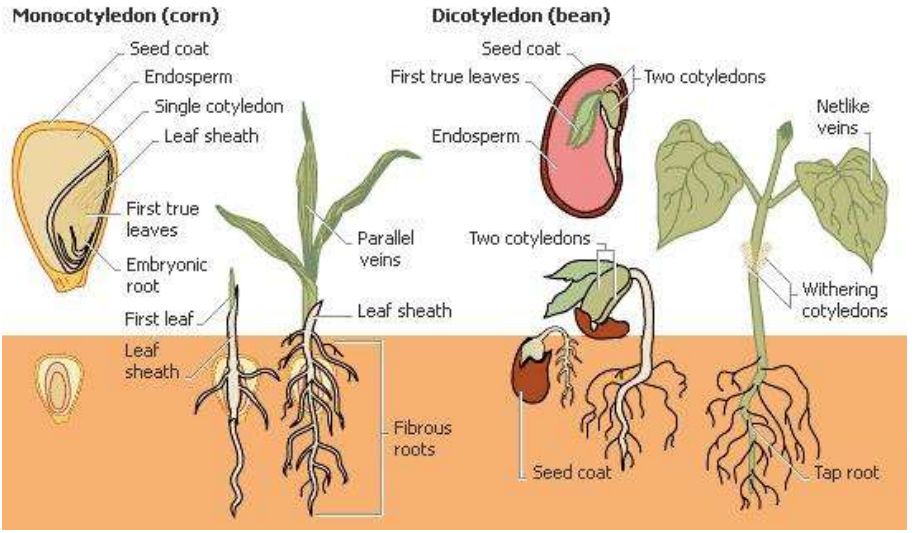
	monocots	**dicots**
leaves	Veins are parallel	Veins are branched
seeds	One seed, one cotyledon (first leaf)	Two seed halves, two cotyledons (first leaf)
roots	Fibrous roots grow randomly and tend to clump	Tap root grows straight down with branching roots that spread out
stems	Vascular bundles grow scattered	Vascular bundles grow in a ring
flowers	Grow in multiples of three	Grown in multiples of four or five

Organizing Plants:

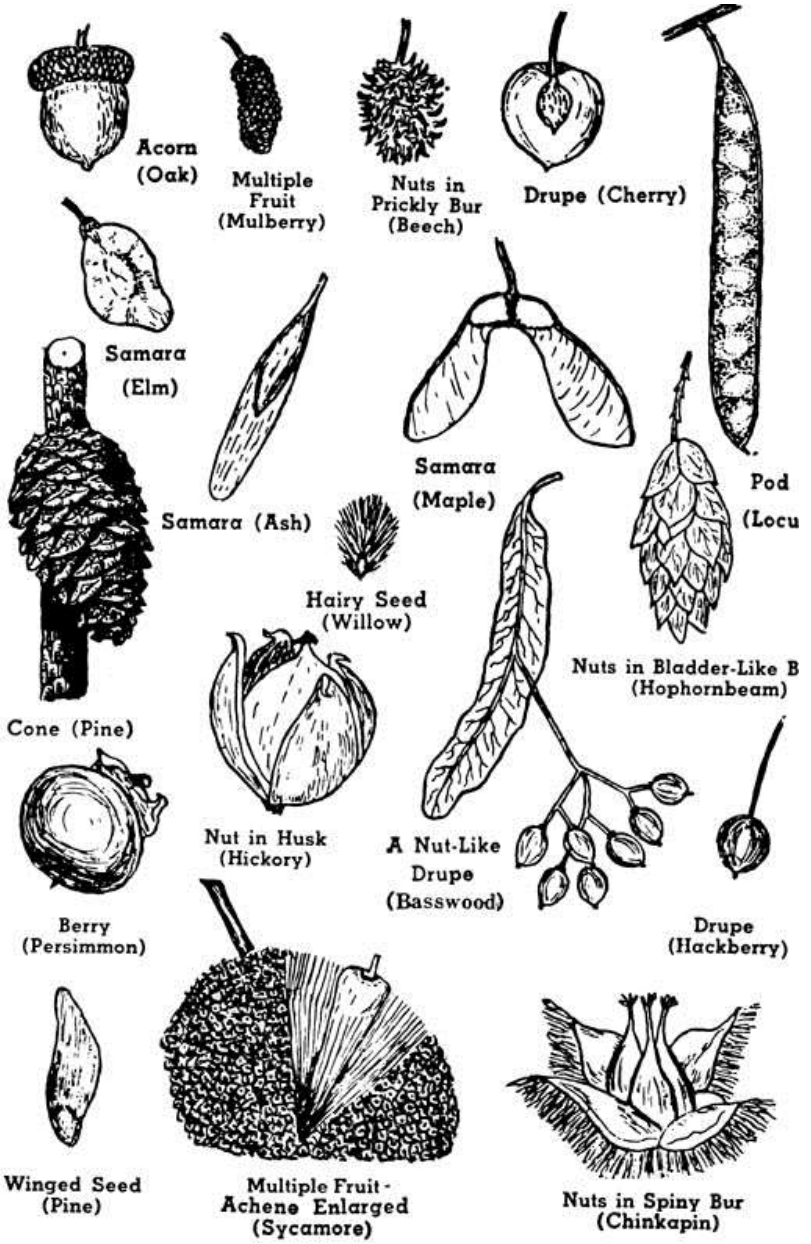




What kind of seed does it have?



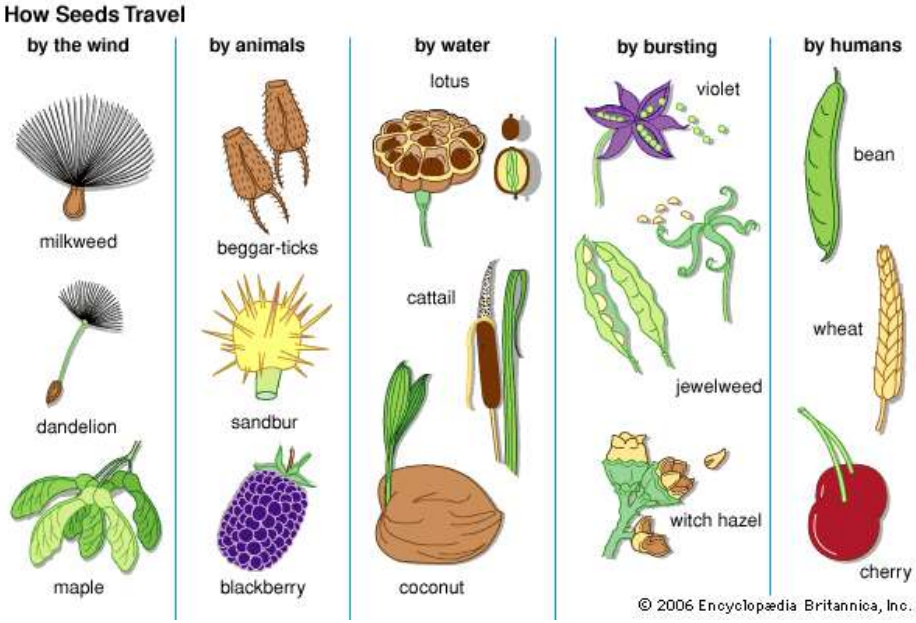
As a botanical artist, you can draw what you observe on the plants around campus; document your findings in a journal.



When you run out of plants on campus to study, try this in your neighborhood, or at a park or botanical garden, or even the zoo!

How is the seed spread?

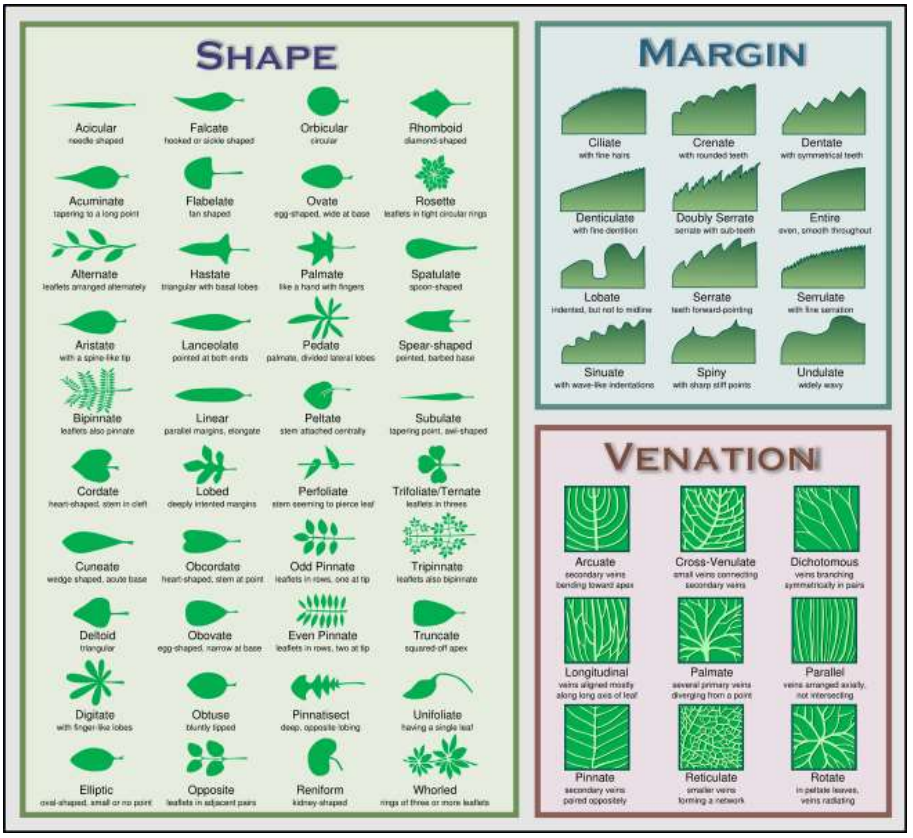
How the seed is distributed is a plant characteristic. Ruellias and Poppies spread seeds by bursting after a rain, to scatter seeds when soil is moist. If you see tan seed pods on a Ruellia bush, spray water on the bush and stand back, the seeds will shoot out with such force it will sting if you're hit by them! Measure the distance of the farthest seed from the parent plant.



The Cottonwood tree produces a fluffy cover around its seeds that looks like cotton. Cottonwood trees like water, they are riparian trees; the seeds blow across an open area until they are stopped by some other plant that had a water source, such as tall grasses at the edge of a stream. Mesquite trees produce bean pods, they are legumes, and rely on animals or humans to spread the pods. The pods drop from the tree and some may be eaten, if the seeds may survive digestion they are deposited in waste somewhere else.

What kind of leaf does it have?

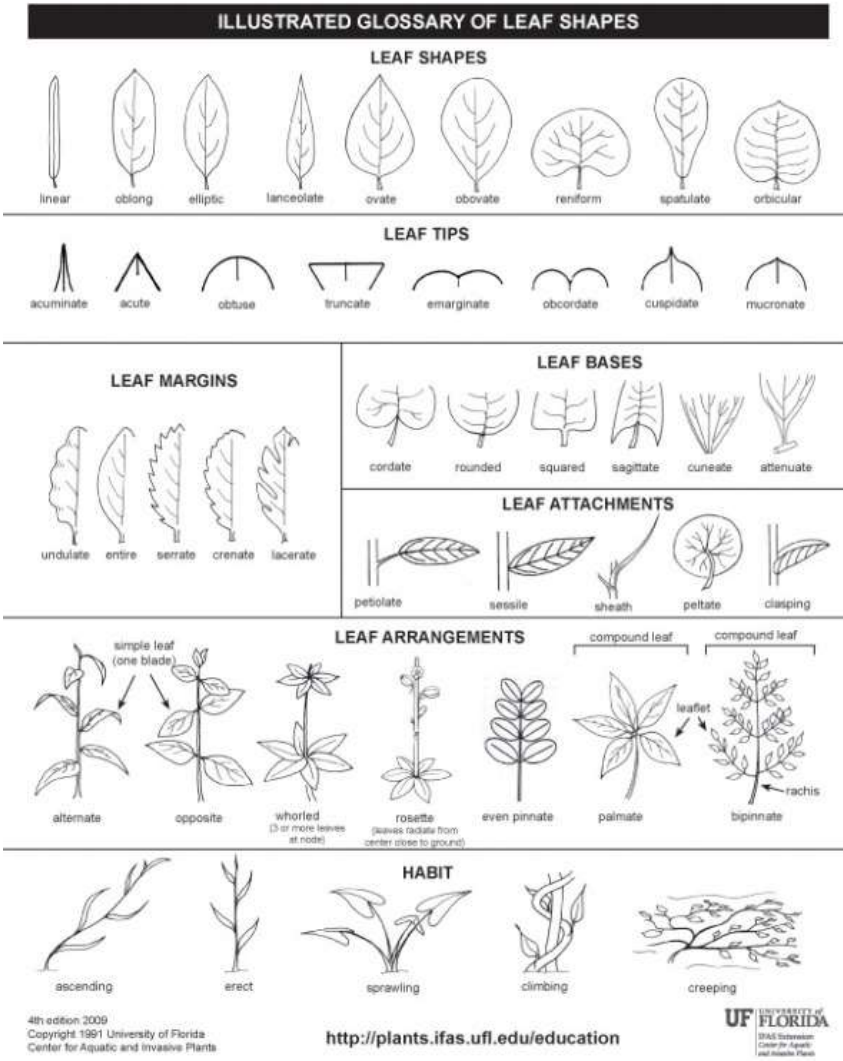
If it is the wrong season to observe a seed on a plant, you may be able to identify it from the leaf. Use your powers of observation to study the different leaf shapes, what the edge of the leaf (margin) looks like, what the vein pattern (venation) of the vascular system in the leaf looks like.



Many desert plants have very small leaves, or compound leaves made up of small leaflets. This is a natural water conservation trait. Larger leaves transpire more water, small leaves release less water. Some compound leaves are further adapted to close up at night, to conserve water, and then open during the day to photosynthesize! Desert plants are very unique; they have

adapted to live in one of the harshest climates, with cold winter nights and hot summer days.

Use your artistic skills to draw what you see. Make notes on the differences and similarities between plants. Can you tell which plants are related within the hierarchy of classifications?



Mexican Bird of Paradise

Arizona Ash

Citrus Tree

Chinese Pistache

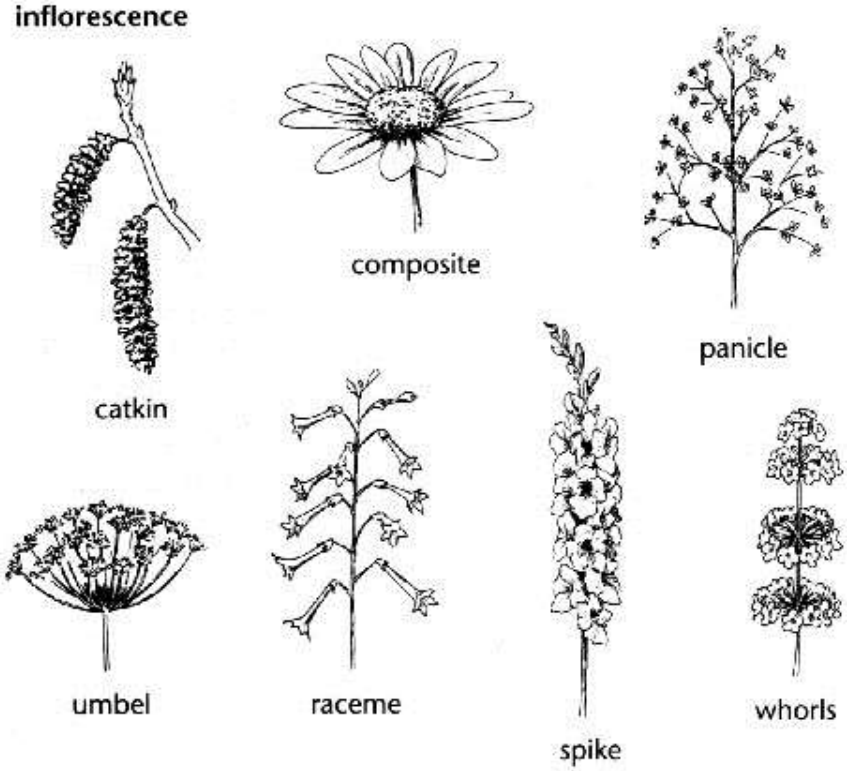
Mesquite

Heritage Live Oak

Evergreen Elm

What kind of flower does it have?

If a plant is in flower, observe what kind of flower it has.



Flowers are organized by the overall shape of the flower structure, as well as by the shape of the individual flower and petals. Flowers are highly adapted reproductive parts that are designed to help pollinate the seeds. Which flower is designed to release pollen into the wind? Which flower would attract hummingbirds? Which flower would attract bats or moths at night? Which flower attracts bees or wasps? Which flower attracts flies? The flower shape, its size, its color, when it opens, and even its smell, is specific to how it is pollinated.

Bees not only see flowers in different colors than we do, bees also see ultra-violet light patterns, invisible to us, at the center that are a different color than the rest of the flower. From a bee's-eye-view, the UV colors and patterns in a flower's petals dramatically announce the flower's stash of nectar and

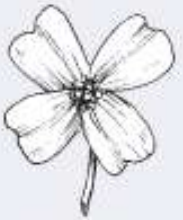
pollen. These UV patterns serve as a landing zone, guiding the bees to the nectar source. Use a UV light to look at flowers on campus or at home, and see the hidden patterns that we can't see, but bees do!

we see	bees see	add in UV
red	black	uv purple
orange	yellow/green*	
yellow	yellow/green*	uv purple
green	green	
blue	blue	uv violet
violet	blue	uv blue
purple	blue	
white	blue green	
black	black	

Bats can't see color, but they see better than humans at night. Some flowers are bright white, and large, and only open at night, to make it easy for bats for find them. Saguaro cactus flowers and Sacred Datura plants open at night, and then remain open the next day, to attract both night and daytime pollinators.

Flower Shapes: Perianth Forms

Alate
(winged)



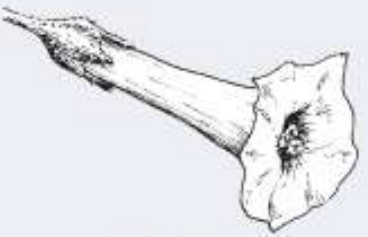
Cruciform
(cross-shaped)

Funnelform
(funnel-shaped)

Campanulate
(bell-shaped)

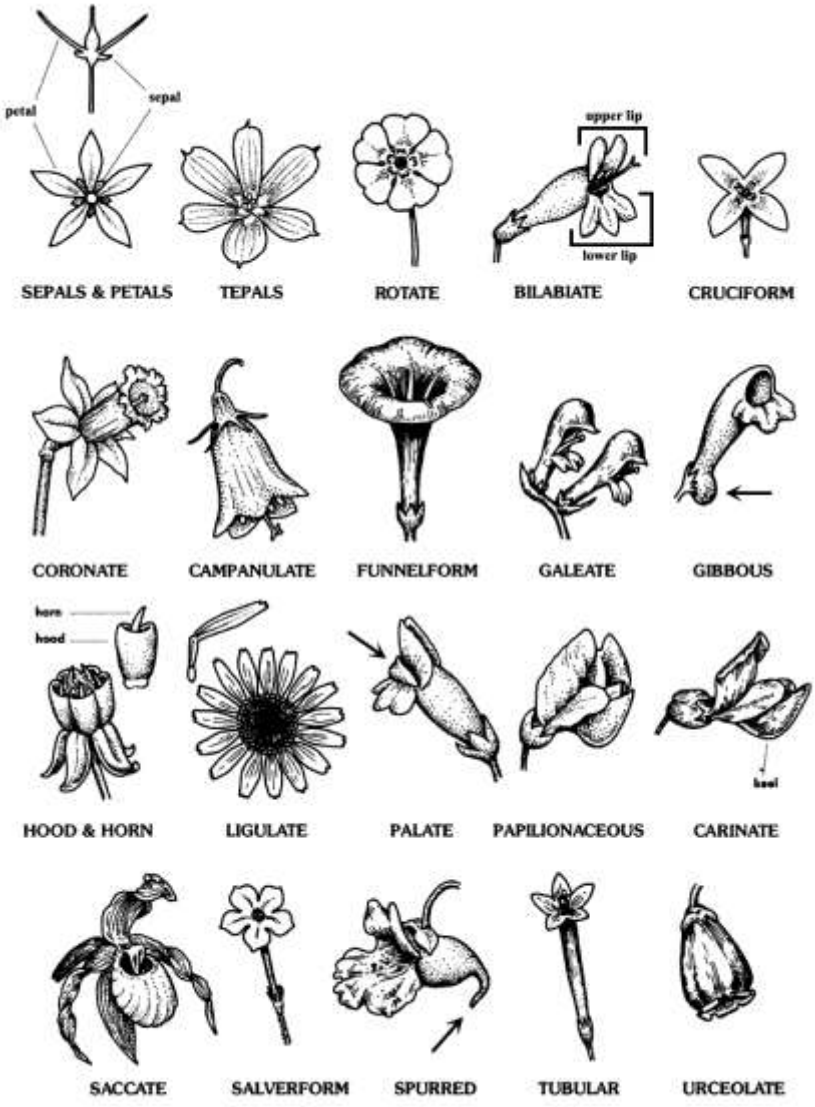
Rosette

Coroniform
(crown-shaped)

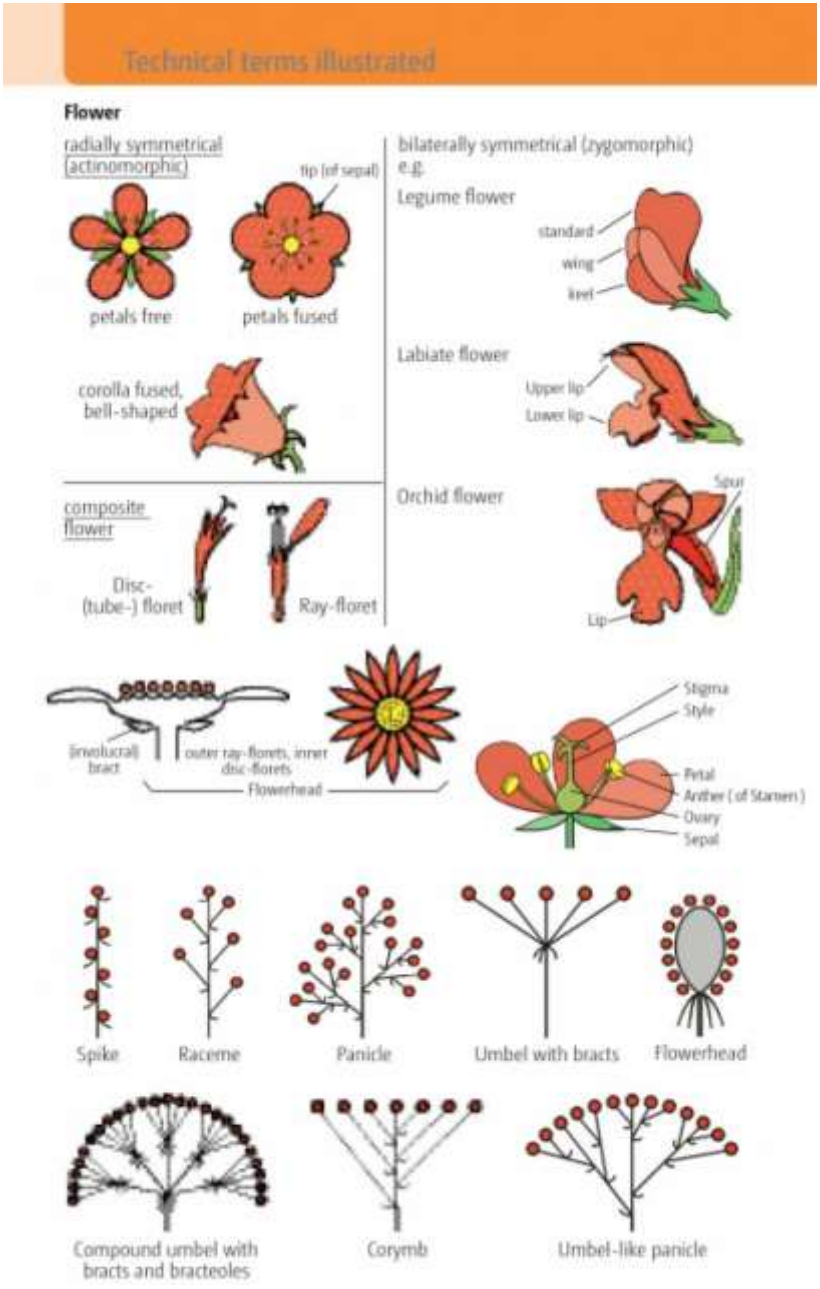


Salverform
(tube-shaped)

PLATE 10. COROLLA TYPES

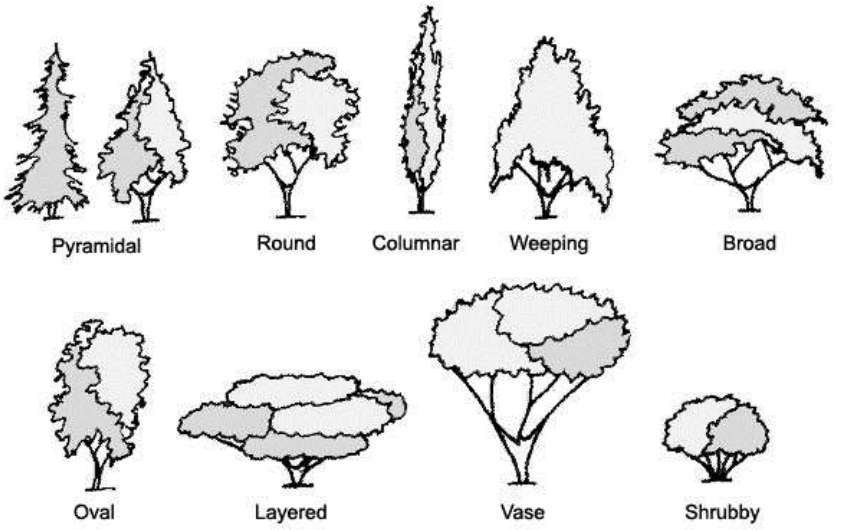


modified from Swink, F. and G. Wilhelm. 1994. *Plants of the Chicago region*. 4th ed. Indianapolis: Indiana Academy of Science.



Tree Canopies

Trees have different natural shapes. These can also help you identify a tree type, unless they've been pruned into un-natural shapes. Below are the basic tree forms. How many of these can you find around campus or in your neighborhood?



Now that you know how to identify plants, walk around campus and see how many of the plants you can find! Look at the whole plant, draw what you see and write down what you observe. What birds or insects do you find, are there any diseases or unusual characteristics on the plant? Does it have a smell? What kinds of leaves, flowers or seeds does it have?

	TREES	
	Caelalpinia mexicana Mexican Bird of Paradise	From Mexico, this tree grows to 18' tall. The common name is used for other plants. Hybrids are thornless.
	Citrus Navel Orange, Lemon, Tangelo	From Asia, this tree grows to 25' tall. It is an evergreen tree that produces edible fruit; it needs a lot of water.
	Fraxinus velutina Arizona Ash	This native riparian tree grows to 39' tall by 26' wide. It is a deciduous tree with yellow fall leaf color.
	Pistachia chinensis Chinese Pistache	From Asia, this deciduous tree is in the cashew family and can grow 50-60' tall. Leaves turn red in the fall.
	Prosopis 'hybrid' Hybrid Mesquite	This native plant has been cultivated to not have thorns. There are many Mesquite varieties. The bean pods are edible, and make great pancake flour! Can grow to 30' tall.

	TREES	
	Quercus virginiana ‘Heritage’ Heritage Live Oak	A cross between *Quercus virginiana* and *Quercus fusiformis*, the Heritage Live Oak is a drought and cold tolerant evergreen tree that grows to 30-45’ tall.
	Ulmus parvifolia Evergreen Elm	From Asia, called evergreen, but is semi-deciduous, when it is cold it will lose it’s leaves.
	Prunus persica ‘Desert Gold’ ‘Tropic Snow’ Peach (varieties that grow in AZ)	Native to Asia, in the Rose family, in the genus of Plums and fruit that produces a “stone” seed. Deciduous tree grows 25’ tall.
	Prunus armeniaca Apricot	Native to Asia, in the also in the Plum genus and produces a stone seed. Deciduous tree grows to 25’ tall.
	Malus domestica ‘Anna’s’ ‘Dorsett’ Apple	Native to Asia, in the Rose family. Anna is from Israel, suited to deserts. Dorsett is from the Bahamas. Deciduous trees grow to 35’ tall.
	Ficus carica Fig	Native of Middle East and Asia. Deciduous tree grows to 35’. Produces a sap that is a skin irritant. Leaves are large and rough.

	TREES	
	Dalbergia sissoo Indian Rosewood or Sissoo	Native of India, it is a deciduous tree that grows to 80' tall. It looks like a Cottonwood, but requires less water and can survive droughts of 3-4 months. Inconspicuous flowers.
	ACCENTS	
	Agave weberii Weber's Agave	Native of Mexico, is in the Amaryllis family (not a cactus). Discovered by Franz Weber, this evergreen plant flowers one time in life. Grows to 6' tall, with a 15' flower stalk. Leaves are 4' long with sharp needle tip and smooth leaf margins.
	Aloe x barbadensis Yellow Medicinal Aloe	Related to plants from Africa, this is a succulent plant. The leaves grow to 20" long with toothed margins. Flower stalks reach 40".
	Dasilyrion wheeleri Desert Spoon	Native to Mexico and Arizona, this is an evergreen plant is related to asparagus (not an agave or aloe). It grows to 5' tall with flexible thin leaves with toothed margins and a 15' flower stalk.

	SHRUBS/ VINES / GRASSES	
	Hesperaloe parviflora '*red*' Red Yucca	Native to Mexico and Texas, this is an evergreen plant related to asparagus. It grows to 4' tall with 6' tall flower spikes every year. Leaves are thin with smooth margins.
	Baileya multiradiata Desert Marigold	Native AZ plant, loves sun, needs little water, easy to collect seeds, is a perennial with small soft grey leaves.
	Calliandra californica Baja Fairy Duster	Native CA plant, loves sun, needs little water, & attracts hummingbirds. 2-6ft plant. Leaves are bipinnately compound.
	Encelia farinosa Brittlebrush	Native to the southwest, loves sun, needs little water & attracts butterflies. 2-4' bush. Semi-deciduous herbaceous perennial with simple grey leaves.
	Justicia californica Chuperosa	Native to the southwest and attracts hummingbirds. Small leaves and succulent stems.

	SHRUBS/ VINES / GRASSES	
	Leucophyllum frutescens 'Compacta' Compact Texas Sage	Native to Texas, not a true sage. This dwarf cultivar is a smaller evergreen shrub, growing to 5' around and tall.
	Mascagnia macroptera Yellow Orchid Vine, or Mexican Butterfly Vine	Native to Mexico, vine is deciduous. Winged seeds look like butterflies. Greek words 'macro' = "large" and 'ptera' = "winged" describes the fruit.
	Mulhenbergia rigins Deer Grass	Native to the southwest and Mexico, a bunching perennial grass. Low water use plant used by Native Americans.
	Passiflora Spp Pasionflower Vine	Nine varieties are native to America. Deciduous vine is frost sensitive. Fruit is edible. Flowers and leaves attract caterpillars, butterflies and hummingbirds.
	Rosemarinus officianalis 'Arp' Arp Rosemary	Native to the Mediterranean, evergreen shrub with a long history of medicinal and culinary uses. Attracts bees.
	Ruellia peninsularis Desert Ruellia	Native to CA, evergreen shrub grows to 4' tall. Seeds burst open in rain. Flowers attract butterflies and hummingbirds.

	SHRUBS / VINES / GRASSES	
	Ruesselia equisetiformis Coral Fountain Grass or Firecracker Bush	Native to Mexico, evergreen shrub grows to 4' in weeping form. Flowers attract hummingbirds.
	Simmondsia chinensis Jojoba	Native to AZ, evergreen shrub grows to 6' tall. Inconspicuous flowers, nut like seed used for oils in cosmetics and creams.
	Tecoma stans 'Gold Star' Arizona Yellow Bells Gold Star	Native to the Southwest, this fast growing deciduous shrub can grow to 15' tall. Attracts bees, hummingbirds and butterflies.
	Vitus arizonica Arizona Grape Ivy	Native to Southwest, this woody vine is a native grape. Flowers are inconspicuous and fruit is small and firm.
	Acacia redolens Desert Carpet	Native to Australia, fast growing woody ground cover is related to Acacia trees, but without thorns. Flowers attract bees.
	Lantana montevidensis Purple Trailing Lantana	Native to South America, this herbaceous shrub grows 2' tall by 5' round. It attracts butterflies and is toxic to livestock.

	SHRUBS / VINES / GRASSES	
	Lantana camera 'New Gold' New Gold Lantana	Native to South America, a cultivar created for color. This mounding shrub grows taller than the trailing variety.
	Tetraneuris acaulis or *Hymenoxys acaulis* Angelita Daisy or Stemless Four-Nerve Daisy	Native to Western America, a small herbaceous perennial plant that grows in a cluster or clump form. Flowers attract butterflies.

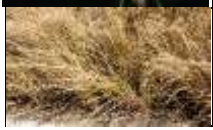
XERISCAPE

Our campus plant palette is a xeriscape design; *xeros* is Greek for dry, and *scape* is taken from landscape-the modification of the environment or changing of the land into a designed condition using rocks, plants and other materials. These plants are low-water using, some even drought tolerant. This saves the campus water and provides vegetation for desert wildlife such as birds, insects and reptiles.

DESERT TORTOISE HABITAT

Desert tortoises are herbivores (plant eaters) that browse on a wide variety of plants. The best diet for a captive tortoise provides a variety of foods to meet its nutritional needs. Captive tortoises should be allowed to graze on grasses, leafy plants, and flowers that are established in the tortoise's enclosure. A healthy, varied diet includes native grasses, dichondra, filaree (heronbill), spurge, dandelion, hibiscus, wild grape, mulberry, and wildflowers such as globemallow. Tortoises enjoy the leaves, stems, and flowers of these plants. This next section identifies plants that are safe and healthy habitat plants for our campus tortoises. When visiting the habitat, wash your hands before and after entering to protect our reptiles and ourselves from sharing germs that could be harmful. Do not pick up tortoises in the wild, their natural defense is to urinate; they will pee on you. This is dangerous to the tortoise, because they lose their stored water. If it is a dry season, or they can't find water to replace what they've lost, they will die. It's important to protect our wildlife!

NATIVE PLANTS FOR TORTOISES

	Abutilon spp. Hoary abutilon	This herbaceous shrub is attractive to bees, butterflies and birds, and is drought-tolerant.
	Acacia angustissima Fern acacia (flowers)	This perennial deciduous large shrub or small tree is attractive to bees. Tortoises eat the flowers.
	Anisacanthus thurberi Desert honeysuckle	This perennial deciduous shrub is attractive to hummingbirds.
	Bouteloua gracilis Blue grama grass	This clumping grass uses water when available and goes dormant during drought.
	Cassia covesii Desert senna	This shrub has a compound pinnate leaf that only comes out when water is available. The flowers are attractive to bees and butterflies.
	Chilopsis linearis Desert willow (flowers)	This deciduous riparian tree attracts birds, hummingbirds and butterflies. Branches used in basketweaving. Tortoises eat the flowers.
	Convolvulaceae Calystegia longipes Morning glory Paiute False Bindweed	There are many invasive species of this vine, it is often banned for sale or import in agricultural states. Some are native to the Sonoran Desert.
	*Digitaria californica* Arizona cottontop grass	This grass grows during rainy season and goes dormant when dry.

	Eriogonum deserticola, fasciculatum & umbellatum Buckwheats	Leaves grow in clusters along the branches and are leathery, woolly underneath, and roll under at edges. Used for medicine by Native Americans.
	Euphorbia spp. Chamaesyce maculate or Euphorbia supina Prostrate Spurge*	Low growing ground cover with white milky sap. It grows in a round radial pattern close to the soil, sheltering insects. Flowers are inconspicuous.
	Hibiscus denudatus and H. coulteri Hibiscus, Desert Rosemallow (flowers and leaves)	This flower is in the Mallow family (Malvaceae)and the Hibiscus genus. It is a deciduous perennial open shrub to 3’ tall. Flowers attract butterflies and bees and tortoises.
	Hilaria belangeri Curly mesquite grass	An important native grass that provides forage (food) for animals and soil stabilization from wind and rain. Not related to Mesquite trees!
	Mirabelis spectabalis Desert four-o’clock	Mirabilis is Latin meaning "marvelous" or "wonderful," Multiflora means "many-flowered".
	Muhlenbergia dumosa Bamboo muhly grass	Fast growing ornamental mounding grass has a soft appearance and can get to be 6’ tall.
	Muhlenbergia rigens Deer Grass	Fast growing ornamental clumping grass can grow to 4’ tall. Important for soil erosion control and chemical filtration.

	Oenothera spp . Mexican Evening primrose*	This plant opens flowers in the evening to attract moths and bats. Spreads by seed and rhizome quickly, making it invasive and hard to remove.
	Opuntia Prickly pear (fruit and new pads)	The prickly pear cactus pads can be eaten when young (nepolitos are sold in stores) and the fruit is a delicious treat for tortoises and people.
	Plantago spp. Plantain*	The common name is shared with a different plant that produces a banana-like fruit, they are not related. This herb has medicinal uses.
	Senna armata & wislizenii Cassia	Many plants are called senna and cassia. These shrubs are related to peas and attract bees to pollinate. Some species have thorns. Native varieties have smaller sparser distributed leaves than the tropical varieites, which require more water.
	Sphaeralcea spp. Globe mallows*	The flower colors vary on this 2-3' open shrub. It attracts bees and butterflies. The plant has medicinal uses, however the hairy stems and leaves can also be an eye irritant.

*Good for young tortoises

Acceptable produce

Barley	Cilantro	Parsley
Bean sprouts (mung)	Collard greens	String beans
Beet greens	Endive	Snow peas
Bok choy	Kale	Spinach
Carrot greens	Mustard greens	Turnip greens

Other healthy foods

Grass, i.e., Bermuda or timothy (fresh or hay)	Clover*	Pumpkin leaves*
	Dandelion greens	Rose petals*
	Grape leaves and shoots	Watercress
Bluegrass lawn	Mulberry leaves*	Zucchini/squash leaves
Cantaloupe leaves		

Avoid the following

Alfalfa	Chinaberry berries	Poisonous plants
Avocado	Plants in the Nicotiana (tobacco) genus	Canned/frozen vegetables
Cabbage		Starchy vegetables (including corn)
Celery		
Cucumber	Mushrooms	
Fruit (all types)	Any protein rich foods	
Lettuce (all types)		

NOTE: green leaf lettuce and strawberries in SMALL amounts is ok, but does not provide the nutrients tortoises need to be part of their regular diet. Try to keep them on a natural diet to keep them healthy. Desert Tortoises can live to be 30-50 years old: your children could come to ECS and see the same animals you enjoyed!

Whether you plan to become a chef, a botanist, a writer, an artist, a science teacher, a pharmacist, chemist, doctor or a gardener, plants touch our lives in many ways. Enjoy spending time outside, observing the plants, sketching, researching and studying them. Know which ones are safe to eat, which ones are poisonous, and which ones can help you heal if you are sick.

If you would like to learn more about any of the plants in this book, research them in plant books and on line. Many desert plants have interesting uses. Such as the native Encelia farinosa: The brownish resin from base of the plant was heated and used as glue. The O'odham and Seri use it for hafting, to hold points on arrows and harpoons. A different sort of resin collected from the upper stems, is more gummy and generally a clear yellow. The Seri use this to seal pottery vessels. Early Spanish friars learned that the resin made a highly fragrant incense, akin to frankincense in odor. The Sells area Tohono O'odham children use upper stem resin as a passable chewing gum. Oldtime cowboys used brittlebush stem as a fine toothbrush. Simply select a largish branch and peel off the bitter bark, no need for toothpaste. Seri used brittlebush to treat toothache. For toothache the bark is removed, the branch heated in ashes, and then placed in the mouth to "harden" a loose tooth. The next time you look at the Brittlebush, you'll see more than just a pretty low-water using desert shrub!

Arizona has many different ecosystems, and has become the adaptive home of many species of plants from around the world. This has led to an increase in allergies, for people allergic to pollen, as our blooming season is all year. There are thousands of native and non-native plants in our city environment, providing food and shelter to many native and non-native

animals and insects. Of the 725 species of butterflies that live in North America, there are over 250 species of butterflies that live in, or visit, Arizona during migration. Our plant diversity is increased by the use of irrigation to water the plants. Explore the different ways that desert plants have adapted to conserve water, and enjoy watching the life cycle of the plants on campus. If you're lucky enough to be at ECS from Kindergarten through 8th grade, you might get to see an agave bolt and bloom!

The landscape plan on the next two pages includes a legend with symbols representing the plants on the plan. Can you find the symbols on the plan, and then walk the campus and find the plant from the plan at school?

Plant Legend

	BOTANICAL NAME COMMON NAME	SIZE	QTY	NOTES (H X W X CAL.)
TREES SYM.				
+	EXISTING TREE TO REMAIN PROTECT IN PLACE			
	CAESALPINIA MEXICANA MEXICAN BIRD OF PARADISE	24" BOX MULTI-TRUNK	30	9'-0" x 4'-0" X 1.5"
	CITRUS TREE NAVEL, LEMON, TANGELO	24" BOX	3	6'-0" x 5'-0" X 1.5"
	FRAXINUS VELUTINA ARIZONA ASH	24" BOX SINGLE-TRUNK	5	14'-0" x 8'-0" X 2.5"
	PISTACHIA CHINENSIS CHINESE PISTACHE	24" BOX SINGLE-TRUNK	11	12'-0" x 6'-0" X 2.5"
	PROSOPIS HYBRID HYBRID MESQUITE	24" BOX MULTI-TRUNK	17	10'-0" x 8'-0" X 2.5"
	QUERCUS VIRGINIANA 'HERITAGE' HERITAGE LIVE OAK	24" BOX SINGLE TRUNK	37	13'-0" x 6'-0" X 2.75"
	ULMUS PARVIFOLIA EVERGREEN ELM	24" BOX SINGLE-TRUNK	13	8'-0" x 3'-0" X 2.5"
	FRUIT TREE 'DESERT GOLD' PEACH 'TROPIC SNOW' PEACH APRICOT 'ANNA' APPLE 'DORSETT' APPLE	24" BOX SINGLE-TRUNK	5	(1) OF EA. VARIETY

ACCENTS

AGAVE WEBERII WEBER'S AGAVE	15 GAL.	12	CAN FULL
ALOE X BARBADENSIS YELLOW MEDICINAL ALOE	5 GAL.	136	CAN FULL
DASYLIRION WHEELERI DESERT SPOON	5 GAL.	57	CAN FULL
HESPERALOE PARVIFLORA 'RED' RED YUCCA	5 GAL.	40	CAN FULL

SHRUBS/VINES

BAILEYA MULTIRADIATA DESERT MARIGOLD	1 GAL.	24	CAN FULL
CALLIANDRA CALIFORNICA BAJA FAIRY DUSTER	5 GAL.	11	CAN FULL
ENCELIA FARINOSA BRITTLEBUSH	1 GAL.	8	CAN FULL
JUSTICIA CALIFORNICA CHUPAROSA	5 GAL.	12	CAN FULL
LEUCOPHYLLUM FRUTESCENS 'COMPACTA' COMPACT SAGE	5 GAL.	17	CAN FULL
MASCAGNIA MACROPTERA YELLOW ORCHID VINE	15 GAL.	5	CAN FULL
MUHLENBERGIA RIGINS DEER GRASS	1 GAL.	135	CAN FULL
PASSIFLORA SPP PASSIONFLOWER VINE	15 GAL.	2	CAN FULL
ROSMARINUS OFFICINALIS 'ARP' ARP ROSEMARY	5 GAL.	55	CAN FULL
RUELLIA PENINSULARIS DESERT RUELLIA	5 GAL.	26	CAN FULL
RUESSELIA EQUISETIFORMIS CORAL FOUNTAIN GRASS	5 GAL.	44	CAN FULL
SIMMONDSIA CHINENSIS JOJOBA	5 GAL.	15	CAN FULL
TECOMA STANS 'GOLD STAR' GOLD STAR	15 GAL.	32	CAN FULL
VITUS ARIZONICA ARIZONA GRAPE IVY	15 GAL.	3	CAN FULL

GROUNDCOVERS

ACACIA REDOLENS DESERT CARPET	5 GAL.	27	CAN FULL
LANTANA MONTEVIDENSIS PURPLE TRAILING LANTANA	5 GAL.	55	CAN FULL
LANTANA 'NEW GOLD' NEW GOLD LANTANA	5 GAL.	156	CAN FULL
TETRANEURIS ACAULIS ANGELITA DAISY	1 GAL.	220	CAN FULL

INERT MATERIALS & TURF

1/4" MINUS DECOMPOSED GRANITE - MATCH EXISTING DG COLOR - 2" MIN DEPTH IN ALL PLANTING AREAS UNLESS OTHERWISE NOTED. LOCATION: ALL INTERIOR COURTYARDS & NATURAL HABITAT AREA.

1/2" MINUS DECOMPOSED GRANITE - MATCH EXISTING DG COLOR - 2" MIN. DEPTH IN PLANTING AREAS UNLESS OTHERWISE NOTED. LOCATION: RETENTION, STREETSCAPE PARKING AREAS.

GRANITE RIP RAP FOR EROSION CONTROL - RIP RAP COLOR SHALL MATCH DG COLOR. REFER TO CIVIL PLANS FOR EXACT SIZE

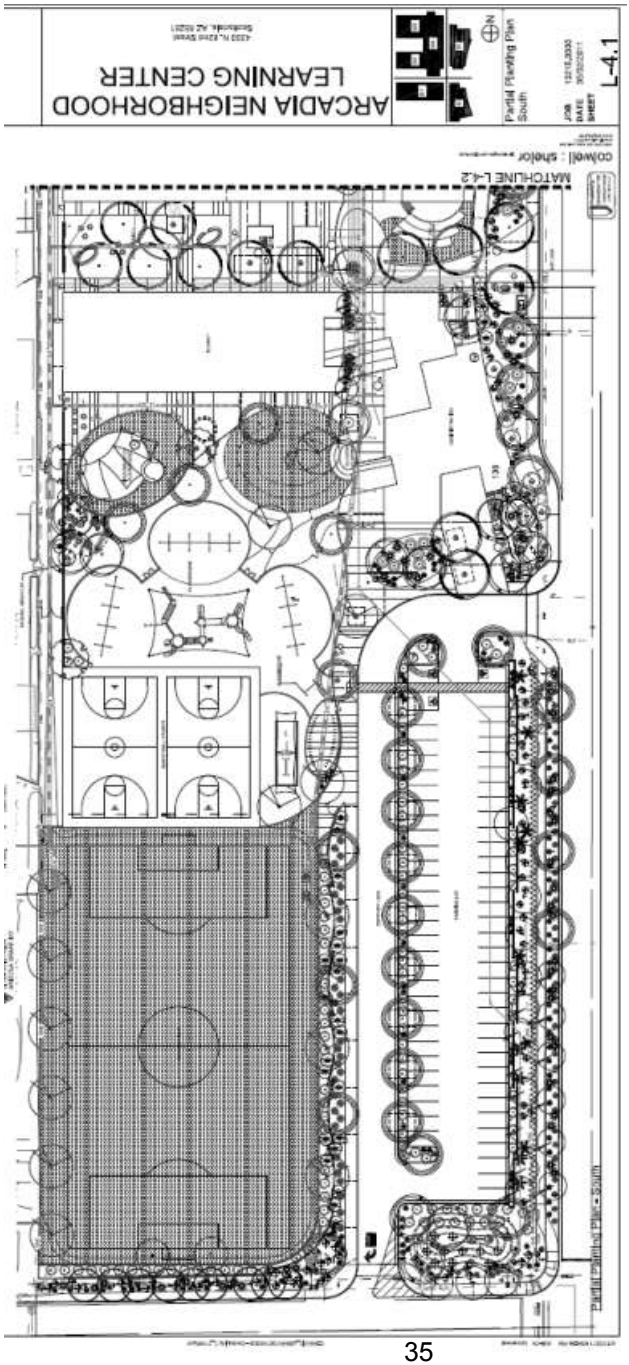
MID-IRON SOD

LIMIT OF STRUCTURAL SOIL

On the next page is the north end of the campus, this guide does not include all the garden plants in the Gleam 3 garden area.

ARCADIA NEIGHBORHOOD
LEARNING CENTER
Partial Planting Plan
North
L-4.2
MATCHLINE L-4.1
Partial Planting Plan - North

This is the south half of the campus see how many plants you can identify from this plan.



Draw what you see	TREES	Write what you observe
	Caelalpinia mexicana Mexican Bird of Paradise	
	Citrus Navel Orange, Lemon, Tangelo	
	Fraxinus velutina Arizona Ash	
	Pistachia chinensis Chinese Pistache	
	Prosopis 'hybrid' Hybrid Mesquite	
	Quercus virginiana 'Heritage' Heritage Live Oak	
	Ulmus parvifolia Evergreen Elm	

Draw what you see	TREES	Write what you observe
	Prunus persica 'Desert Gold' 'Tropic Snow' Peach (varieties that grow in AZ)	
	Prunus armeniaca Apricot	
	Malus domestica 'Anna's' 'Dorsett' Apple	
	Ficus carica Fig	
	Dalbergia sissoo *Indian* Rosewood or Sissoo	

Draw what you see	ACCENTS	Write what you observe
	Agave weberii Weber's Agave	
	Aloe x barbadensis Yellow Medicinal Aloe	
	Dasilyrion wheeleri Desert Spoon or Sotol	
	Hesperaloe parviflora '*red*' Red Yucca	

Draw what you see	SHRUBS/ VINES / GRASSES	Write what you observe
	Baileya multiradiata Desert Marigold	

Draw what you see	SHRUBS/ VINES / GRASSES	Write what you observe
	Calliandra californica Baja Fairy Duster	
	Encelia farinosa Brittlebrush	
	Justicia californica Chuperosa	
	Leucophyllum frutescens 'Compacta' Compact Texas Sage	
	Mascagnia macroptera Yellow Orchid Vine, or Mexican Butterfly Vine	
	Mulhenbergia rigins Deer Grass	

Draw what you see	SHRUBS/ VINES / GRASSES	Write what you observe
	Passiflora Spp Pasionflower Vine	
	Rosemarinus officianalis 'Arp' Arp Rosemary	
	Ruellia peninsularis Desert Ruellia	
	Ruesselia equisetiformis Coral Fountain Grass or Firecracker Bush	
	Simmondsia chinensis Jojoba	
	Tecoma stans 'Gold Star' Arizona Yellow Bells Gold Star	

Draw what you see	SHRUBS/ VINES / GRASSES	Write what you observe
	Vitus arizonica Arizona Grape Ivy	
	Acacia redolens Desert Carpet	
	Lantana montevidensis Purple Trailing Lantana	
	Lantana camera 'New Gold' New Gold Lantana	
	Tetraneuris acaulis or *Hymenoxys acaulis* Angelita Daisy or Stemless Four-Nerve Daisy	