

Bryant's Q&D Guide to the Agaveaceae genera
(Agave family -- stuff with narrow leaves over a foot long)
(Caution: this key may not work outside of SE Az. and S. Calif.
[and maybe not even for all spp there],
but will suffice for the practical for Bio 415L)

2 questions to answer:

1. Does it have split ends or sharp spines at the ends of the leaves?
2. Does it have sharp hooks along leaf edges, or are leaf edges smooth (possibly also with curling fibers)

1. Does it have split ends or sharp spines on the ends of the leaves?

Split ends: either Sotol or Beargrass: Go to 2

Sharp Spines: either Agave or Yucca: Go to 3

2a. If Split ends and hooked spines along leaf edges, it is SOTOL

2b. If Split ends and smooth leaf edges (may have curling fibers along leaf edges), it is BEARGRASS

3a. If sharp spines on ends and hooked spines along leaf edges, it is AGAVE

3b. If sharp spines on leaf ends and smooth leaf edges (may have curling fibers along leaf edges), it is YUCCA

Bryant's Q&D Guide to the Oak species
(Caution: this key will not work outside of the species
you are responsible for on the practical for Bio 415L)

If it is deciduous (loses its leaves in winter) it is GAMBEL'S
OAK (large, brown, deeply lobed leaves this time of
year)

If it is an EVERGREEN OAK (small hard, green leaves all
year), then you are in some trouble. Good Luck!

But, here are some hints:

If the leaves are long ($>2''$), and distinctly white on the
underside, it is SILVERLEAF OAK. Leaves 3-4
times as long as wide.

Toumey Oak: reddish main vein on underside of leaf
near where leaf joins stem. Maybe not on every single
leaf, but on most.

Emory Oak: leaves twice as long as wide. Upper &
lower sides of leaf look very similar; sort of yellowish-
green.

Canyon Live Oak: leaves usually not twice as long as
wide, maybe $1 \frac{1}{3}$ times as long as wide. Dark green
leaves on upper side, very light green on underside.
Some leaves with prickles, some with no prickles.
Golden fuzz on underside of some leaves.

Bryant's Q&D Guide to the thorny shrub species
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are responsible for on the practical for Bio 415L)

The thorny shrubs include velvet mesquite, whitethorn acacia,
catclaw, and Ocotillo.

If it has paired thorns, it is Catclaw, Mesquite, or White-thorn
Acacia, all members of the Pea Family.

If it has thorns coming out all around the stem (NOT in pairs
like the three above), it is OCOTILLO

The Pea family thorny shrubs go like this:

If it has curved, claw-like thorns, it is, naturally enough,
CATCLAW.

If it has "knobby knees" (swellings at the nodes) obvious from
ten feet away, it is older growth on a MESQUITE.

If the stems are purple and yellow color, and there is
pronounced zig-zagging of the stem at each pair of
thorns, it is new growth of MESQUITE.

If there is a lack of "knobby knees", and a lack of purple/yellow
stems, and a lack of pronounced zig-zagging at each
pair of thorns, it is WHITETHORN ACACIA.

the "knobby knees from ten feet away" is probably the best
diagnostic.

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Pine tree key for Arizona course.
(Caution: this key will not work outside of the species you are responsible for on the practical for Bio 415L)

Pine Trees have more than one needle in a bundle. (Fir and Dougfir have single needles coming out from the stem)

Are the needles longer than your middle finger?

If so, it is either Apache or Arizona (Ponderosa) Pine

If the needles are longer than your spread hand (from little fingertip to thumb tip), it is APACHE PINE

If the needles are shorter than your spread hand (from little fingertip to thumb tip), it is ARIZONA PINE (Ponderosa Pine)

If needles shorter than your middle finger, it is Mexican Pinyon, Western White, or Chihuahua Pine.

If the needles have distinct white stripes on them, and **generally** in bundles of FIVE, it is SOUTHWESTERN WHITE PINE (white stripes=white pine). Needles about 2-3" long.

If the needles are 1-2" long, and have distinct white stripes on them, and are **generally** in bundles of THREE, it is Mexican Pinyon Pine.

If there are NO distinct white stripes on needles, and they are **generally** in bundles of 3, and about 2-3" long, it is CHIHUAHUA PINE. The cones of Chihuahua Pine are persistent, that is, they remain on the branches even after the seeds have fallen out; the cones of the other local pine trees fall off the tree.

How to Identify Some Other Plants:

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GRAPE: look for tendrils - it is the only plant with them - (tendrils are thick fibers [pencil lead thick], coming out from the stem at the nodes) that grab on to other things, allowing the grape vine to climb up said other things.

Mountain Mahogany and Ceanothus: Look at STEM COLOR. Ceanothus has light gray, almost white, stems. Mountain Mahogany has dark gray, almost black, undersides of stems. Ceanothus has white flowers this time of year (late March); mountain mahogany hasn't bloomed yet. On the leaves, look at the underside of the leaf. The main leaf vein, where it joins the stem, is usually REDDISH in MOUNTAIN MAHAGONY, while it is YELLOWISH OR WHITISH in CEANOTHUS.

Sumac: yellow-green, pinnately compound leaves, generally with 5-7 leaflets and LONG REDDISH THIN PETIOLES.

Oaks do not have compound leaves.

Alligator Juniper & Arizona Cypress: Juniper has small, greenish-bluish, fleshy, closed berries, white dots on foliage, and new growth foliage is prickly if rubbed between palms of hands. Cypress has larger, dried-up "exploding soccer ball" fruits, no white dots on foliage, and is not prickly if rubbed between palms of hands.

Arizona Madrone: reddish branch tips & petioles, but NOT compound leaves, and nice, dark green leaves.

White Fir and Dougfir: These sort of look like short-needled pines, but have ONLY SINGLE NEEDLES COMING OUT FROM THE STEM. Dougfir (which is not a true fir, but a "false hemlock", hence it is written as the one word Dougfir) has needles in a whorl (coming out from all sides of the stem). Dougfir also has papery cones with snake tongues on it. White Fir, which is a true fir, has cones which disintegrate on the tree. Its needles come out in a row on each side of the stem and then point up; they appear more or less in two rows, rather than all around the stem. Dougfir needles are also fairly sharp pointed, whereas White Fir needles are more blunt.

Garryea (Silktassel). Looks like Manzanita