KEY TO CLASSES OF VASCULAR PLANTS IN NEW SOUTH WALES - from Flora of NSW Volume 1

1	Plants not reproducing by seeds.	
2	Stems prominently jointed: leaves whorled, forming a sheath at stem nodes.	**CLASS 3 SPHENOPSIDA**
2*	Stems not jointed; leaves absent or if present, not whorled and forming a sheath at the nodes.	
3	Sporangia borne on stems, in the axils of leaves or leaf-like organs, or embedded in the expanded bases of such organs.	
4	Sporangia fused to form synangia	**CLASS 1 PSILOPSIDA**
4*	Sporangia not fused into synangia.	**CLASS 2 LYCOPSIDA**
3*	Sporangia borne otherwise (on leaves or in nut-like sporocarps).	**CLASS 4 FILICOPSIDA**
1*	Plants reproducing by seeds.	
5	Ovules not enclosed in a carpel; ovules arranged in cones or solitary on a short fleshy axis (non-flowering seed plants).	
6	Leaves pinnate.	**CLASS 5 CYCADOPSIDA**
6*	Leaves simple.	**CLASS 6 CONIFEROPSIDA**
5*	Ovules enclosed in a carpel; carpels arranged in flowers (flowering plants).	**CLASS 7 MAGNOLIOPSIDA**

Class MAGNOLIOPSIDA

Description: The Magnoliopsida are terrestrial, epiphytic or aquatic vascular plants which form flowers and reproduce sexually by seeds enclosed in an ovary. The sporophyte consists of true roots, stems and true leaves which are either simple, variously compound or sometimes reduced and scale-like and are alternate, opposite or whorled.

The flowers include the often showy petals and sepals as well as the sexual reproductive structures. The two distinct phases of the life cycle are not readily apparent as the gametophytes are microscopic and formed in the stamens and carpels. The pollen grains (microspores) are produced within the anthers and transferred to the stigma of the carpel. This process (pollination) is effected by various vectors including wind, water, insects and larger animals; many flowers are specialized for a particular agent. After pollination and fertilization in the ovule of the egg cell (formed by the megaspore) by the sperm (formed in the pollen grain) the seed develops.

Seeds are protected by the ovary wall (pericarp) in the fruiting stage and the embryo has one or two cotyledons. After dispersal of the fruit and/or seed and its germination the new sporophyte is formed

Distribution and occurrence: World: c. 470 families; 13,700 genera; 240,000 species, cosmopolitan. Australia: c. 230 families, 2600 genera;18,000 species, all States.

The **Magnoliopsida** is divided into the subclasses **Magnoliidae** and **Liliidae**, commonly known as the **dicotyledons** and **monocotyledons** respectively.

Monocotyledons (Subclass Liliidae) – from Flora of NSW Volume 1, p 89

Herbs, shrubs, climbers or trees in which the embryo has one cotyledon. The stem with closed vascular bundles scattered irregularly through it; the leaf venation is often parallel and the leaf base is often sheathing; the parts of the flower are usually in whorls of 3 or 2 or multiples of 3 or 2.

1	Leaves usually with an open sheath that surrounds the stem and a ligule usually present at the top of the sheath although often much reduced; flowers enclosed by a palea and lemma and variously arranged into spikelets	**POACEAE**
1*	Leaves and flowers not as above	
2	Leaves on adult plants reduced to open sheaths on the aerial stems (sheath sometimes bears a small +/- linear lamina)	**RESTIONACEAE**
2*	Leaves not as above	
3	Plants arborescent	**GROUP 27**
3*	Plants herbaceous	
4	Leaves with reticulate venation; main veins often longitudinal	**GROUP 28**
4*	Leaves with parallel venation	
5	Leaves 4-10cm wide	**GROUP 29**
5*	Leaves <4cm wide	
6	Leaves well developed, green and scattered along the aerial stem and branches; flowers usually axillary or in small terminal inflorescences; underground stems generally not well developed	**GROUP 30 (includes Cyperaceae)**
6*	Leaves all or mostly basal or reduced and bract-like along the aerial stems; flowers commonly borne on a +/- leafless scape; underground stems well developed, usually modified into bulbs, corms, tubers or rhizomes	
7	Either flowers unisexual and in dense spikes (male above, female below), or flowers covered by glume-like bracts	**GROUP 31 (includes Eriocaulaceae, Centrolepidaceae, Cyperaceae)**
7*	Flowers and inflorescence otherwise	
8	Ovary superior	**GROUP 32 (includes Juncaceae)**
8*	Ovary inferior or half-inferior	**GROUP 33**