**FLOWER SEX AND PLANT SEX**

Flower sex refers to the presence or absence of male and female parts within a flower. Most flowers are **perfect** or **bisexual**, having both stamens and carpels. Bisexual flower sex is likely the ancestral condition in angiosperms. Many angiosperm taxa have **imperfect** or **unisexual** flower sex. In this case, flowers are either **pistillate**/**female**, in which only carpels develop, or **staminate**/**male**, in which only stamens develop.

Plant sex refers to the presence and distribution of perfect or imperfect flowers on individuals of a species. A **hermaphroditic** plant is one with only bisexual flowers. A **monoecious** (*mono*, one + *oikos*, house) plant is one with only unisexual flowers, both staminate and pistillate on the same individual plant; e.g., *Quercus* spp., oaks. A **dioecious** (*di*, two + *oikos*, house) plant is one with unisexual flowers, but with staminate and pistillate on separate individual plants (i.e., having separate male and female individuals; e.g., *Salix* spp., willows). Plant sex can vary within individuals of a species, and there may also be a combination of perfect and imperfect flowers in different individuals.

**Polygamous** is a general term for a plant with both bisexual and unisexual flowers. **Andromonoecious** refers to a plant with both staminate and perfect flowers on the same individual, and **gynomonoecious** is a plant with both pistillate and perfect flowers on the same individual. **Trimonoecious** refers to a plant with pistillate, staminate, and perfect flowers on the same individual. **Androdioecious** refers to a plant with male flowers on some individuals and perfect flowers on other individuals. **Gynodioecious** refers to a plant with female flowers on some individuals and perfect flowers on other individuals. **Trioecious** refers to a plant with pistillate, staminate, and perfect flowers on different individuals.

**FLOWER ATTACHMENT**

Flower attachment is **pedicellate**, having a pedicel; **sessile**, lacking a pedicel; or **subsessile**, having a short, rudimentary pedicel. The terms **bracteate**, with bracts, and **ebracteate**, lacking bracts, may also be used with respect to flower attachment.

**FLOWER CYCLY**

Flower cycly refers to the number of cycles (series or whorls) or floral parts. The two basic terms used are **complete**, for a flower having all four major series of parts (sepals, petals, stamens, and carpels) and **incomplete**, for a flower lacking one or more of the four major whorls of parts (e.g., any unisexual flower, or a bisexual flower lacking a corolla).

**FLOWER SYMMETRY**

Flower symmetry is an assessment of the presence and number of mirror-image planes of symmetry. **Actinomorphic** or **radial** symmetry (also called **regular**) is that in which there are three or more planes of symmetry, such that there is a repeating structural morphology when rotated less than 360° about an axis. **Biradial symmetry** means having two (and only two) planes of symmetry.

**Zygomorphic** or **bilateral** symmetry (also called **irregular**) is that in which there is only one plane of symmetry. An **asymmetric** flower lacks any plane of symmetry, usually the result of twisting of parts. Flower symmetry can sometimes be subtle and can even vary within a flower; if so, it should be separately described for calyx, corolla, androecium, and gynoecium to avoid confusion. Actinomorphic flower symmetry is likely the ancestral condition in angiosperms and is found in a large number of groups. Zygomorphy has evolved repeatedly in many groups, typically as a means of more efficiently transferring pollen to an animal (usually insect) pollinator.

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Flower symmetry types