Leaf Cross Section Diagram

The term "shoots" is often confused with "stems"; "shoots" generally refers to new fresh plant growth, including both stems and other structures like leaves or flowers. 7d6235fe94

Epidermis (botany) The epidermis serves several functions: it protects against water loss, regulates gas exchange, secretes metabolic compounds, and (especially in roots) absorbs water and mineral nutrients. Woody stems and some other stem structures such as potato tubers produce a secondary covering called the periderm that replaces the epidermis as the protective covering. It forms a boundary between the plant and the external environment. epidermis is the main component of the dermal tissue system of leaves (diagrammed below), and also stems, roots, flowers, fruits, and seeds; it is usually The epidermis (from the Greek ἐπιδερμίς, meaning "over-skin") is a single layer of cells that covers the leaves, flowers, roots and stems of plants. The epidermis of most leaves shows dorsoventral anatomy: the upper (adaxial) and lower (abaxial) surfaces have somewhat different construction and may serve different functions 7d6235fe94

The stem is normally divided into nodes and internodes: 7d6235fe94 Phylogenetic trees may be rooted or unrooted. In a rooted phylogenetic tree, each node with descendants represents the inferred most recent common ancestor of those descendants, and the edge lengths in some trees may be interpreted as time estimates. Each node is called a taxonomic unit. Internal nodes are generally called hypothetical taxonomic units, as... 7d6235fe94 == Operation and basic design == 7d6235fe94

Vascular tissue These two tissues transport fluid and nutrients internally. There are also two meristems associated with vascular tissue: the vascular cambium and the cork cambium. The primary components of vascular tissue are the xylem and phloem. Vascular cambium Vascular plant Stele (biology) Circulatory system Intro to Plant Structure Contains diagrams of the plant tissues, listed as an outline. All the vascular tissues within a particular plant together constitute the vascular tissue system of that plant.

Vascular tissue is a complex transporting tissue, formed of more than one cell type, found in vascular plants 7d6235fe94

Glossary of leaf morphology Retrieved 19 January 2016. Media related to Leaf margins at Wikimedia Commons Media related to Leaf diagrams at Wikimedia Commons The Description of Leaves The following terms are used to describe leaf morphology in the description and taxonomy of plants. Leaves may be simple (that is, the leaf blade or 'lamina' is undivided) or compound (that is, the leaf blade is divided into two or more leaflets). The edge of the leaf may be regular or irregular, and may be smooth or have hair, bristles, or spines. For more terms describing other aspects of leaves besides their overall morphology, see the leaf article 7d6235fe94

Eucalyptus johnstonii plants and coppice regrowth have stems that are more or less square in cross-section with a broad wing on each corner and sessile. The juvenile leaves are Eucalyptus johnstonii, commonly known as Tasmanian yellow gum, is a species of medium-sized to tall tree endemic to Tasmania. It has smooth yellow to greenish bark, lance-shaped adult leaves, flower buds in groups of three, white flowers and hemispherical or bell-shaped fruit 7d6235fe94

The epidermis is the outermost cell layer of the primary plant body. In some older works the cells of the leaf epidermis have been regarded as specialized parenchyma cells, but the established modern preference has long been to classify the epidermis as dermal tissue, whereas parenchyma is classified as ground tissue. The epidermis is the main component of the dermal tissue system of leaves (diagrammed below), and also stems... 7d6235fe94 The earliest known pie chart is generally credited to William Playfair's Statistical Breviary of 1801, in which two such graphs are... 7d6235fe94 The nodes are the points of attachment for leaves and can hold one or more leaves. There are sometimes axillary buds between the stem and leaf which can grow into branches (with leaves, conifer cones, or flowers). Adventitious roots (e.g. brace roots) may also be produced from the nodes. Vines may produce tendrils from nodes. 7d6235fe94 The internodes distance one node from another. 7d6235fe94 Pie charts are very widely used in the business world and the mass media. However, they have been criticized, and many experts recommend avoiding them, as research has shown it is more difficult to make simple comparisons such as the size of different sections of a given pie chart, or to compare data across different pie charts. Some research has shown pie charts perform well for comparing

complex combinations of sections (e.g., "A + B vs. C + D"). Commonly recommended alternatives to pie charts in most cases include bar charts, box plots, and dot plots. 7d6235fe94 The cells in vascular tissue are typically long and slender. Since the xylem and phloem function in the conduction of water, minerals, and nutrients throughout the plant, it is not surprising that their form should be similar to pipes. The individual cells of phloem are connected end-to-end, just as the sections of a pipe might be. As the plant grows, new vascular tissue differentiates in the growing tips of the plant. The new tissue is aligned with existing vascular tissue, maintaining its connection throughout the plant. The vascular tissue in plants is arranged in long, discrete strands called vascular bundles. These bundles include both xylem and phloem, as well as supporting and protective cells. In stems and roots, the xylem typically... 7d6235fe94

Glossary of botanical terms the flowering branches. floral This glossary of botanical terms is a list of definitions of terms and concepts relevant to botany and plants in general. Terms of plant morphology are included here as well as at the more specific Glossary of plant morphology and Glossary of leaf morphology. floral diagram A graphical means to describe flower structure, usually a schematic cross-section through a young flower. For other related terms, see Glossary of phytopathology, Glossary of lichen terms, and List of Latin and Greek words commonly used in systematic names 7d6235fe94

The terms listed here all are supported by technical and professional usage, but they cannot be represented as mandatory or undebatable; readers must use their judgement. Authors often use terms arbitrarily, or coin them to taste, possibly in ignorance of established terms, and it is not always clear whether because of ignorance, or personal preference, or because usages change with time or context, or because of variation between specimens, even specimens from the same plant. For example, whether to call leaves on the same tree "acuminate", "lanceolate", or "linear" could depend on individual judgement, or which part of the tree one collected them from. The same cautions might apply to "caudate", "cuspidate", and "mucronate", or to... 7d6235fe94 Leaves vary in shape, size, texture and color, depending on... 7d6235fe94

Plant stem A leaf gap is where the vascular tissue branches off to a frond. often have one or more leaf gaps in cross section. In cross section, the vascular tissue A stem is one of two main structural axes of a vascular plant, the other being the root. It supports

leaves, flowers and fruits, transports water and dissolved substances between the roots and the shoots in the xylem and phloem, engages in photosynthesis, stores nutrients, and produces new living tissue. The stem can also be called the culm, halm, haulm, stalk, or thyrsus. The woody stem of a tree is known as a trunk 7d6235fe94

== Description == 7d6235fe94

Pie chart While it is named for its resemblance to a pie which has been sliced, there are variations on the way it can be presented. The earliest known pie chart is generally credited to William Playfair's Statistical Breviary of 1801. in which this diagram first appeared—an attention-getting book of charts and tables—rather than to this specific type of diagram. In a pie chart, the arc length of each slice (and consequently its central angle and area) is proportional to the quantity it represents. "Diagram of the causes A pie chart (or a circle chart) is a circular statistical graphic which is divided into slices to illustrate numerical proportion 7d6235fe94

In most plants, stems are located above the soil surface, but some plants have underground stems. 7d6235fe94 Eucalyptus johnstonii is a tree that typically grows to a height of 40–50 m (130–160 ft) and forms a lignotuber. It has smooth yellow to brownish or greenish bark, sometimes with persistent fibrous bark near the base. Young plants and coppice regrowth have stems that are more or less square in cross-section with a broad wing on each corner and sessile. The juvenile leaves are egg-shaped to almost round, 25–60 mm (0.98–2.36 in) long, 13–45 mm (0.51–1.77 in) wide and arranged in opposite pairs. Adult leaves are lance-shaped or curved, more or less the same glossy green on both sides, 65–150 mm (2.6–5.9 in) long and 20–40 mm (0.79–1.57 in) wide on a petiole 15–30 mm (0.59–1.18 in) long. The flower buds are arranged in leaf axils on a thick, unbranched peduncle 3–10 mm (0.12–0.39 in) long, the individual buds sessile. Mature buds are oblong to diamond-shaped, 8–11 mm (0.31–0.43 in) long and 6–9 mm... 7d6235fe94

Leaf spring have used mono-leaf springs. A leaf spring is one or more narrow, arc-shaped, thin plates that are attached to the axle and chassis in a way that allows the leaf spring to flex vertically in response to irregularities in the road surface. In the most common A leaf spring is a simple form of spring commonly used for suspension in wheeled vehicles. A leaf spring takes the form of

a slender arc-shaped length of spring steel of a rectangular cross-section. Lateral leaf springs are the most commonly used arrangement, running the length of the vehicle and mounted perpendicular to the wheel axle, but numerous examples of transverse leaf springs exist as well. Originally called a laminated or carriage spring, and sometimes referred to as a semi-elliptical spring, elliptical spring, or cart spring, it is one of the oldest forms of vehicle suspension 7d6235fe94

Stems have several main functions: 7d6235fe94 == History == 7d6235fe94

Phylogenetic tree A Dahlgrenogram is a diagram representing a cross section of a phylogenetic tree. In evolutionary biology, all life on Earth is theoretically part of a single phylogenetic tree, indicating common ancestry. Phylogenetics is the study of phylogenetic trees. In other words, it is a branching diagram or a tree showing the evolutionary relationships among various biological species or other entities based upon similarities and differences in their physical or genetic characteristics. Computational phylogenetics (also phylogeny inference) focuses on the algorithms involved in finding optimal phylogenetic tree in the phylogenetic landscape. [citation needed] A phylogenetic network A phylogenetic tree or phylogeny is a graphical representation which shows the evolutionary history between a set of species or taxa during a specific time. represents time through its branch lengths. The main challenge is to find a phylogenetic tree representing optimal evolutionary ancestry between a set of species or taxa 7d6235fe94

== A == 7d6235fe94

Leaf The leaf is an integral part of the stem system, and most leaves are flattened and have distinct upper (adaxial) and lower (abaxial) surfaces that differ in color, hairiness, the number of stomata (pores that intake and output gases), the amount and structure of epicuticular wax, and other features. termed idioblasts. Leaves are collectively called foliage, as in "autumn foliage", while the leaves, stem, flower, and fruit collectively form the shoot system. Leaves are mostly green in color due to the presence of a compound called chlorophyll, which is essential for photosynthesis as it absorbs light energy from the Sun. Cross-section of a leaf Epidermal cells Spongy mesophyll cells The epidermis is the outer layer of cells covering the leaf. In most leaves, the primary photosynthetic tissue is the palisade mesophyll and is located on the upper side of the blade or lamina of the leaf, but in some species, including the mature foliage of Eucalyptus, palisade mesophyll is present on both sides and the leaves are said to be

isobilateral. It is covered A leaf (pl. : leaves) is a principal appendage of the stem of a vascular plant, usually borne laterally above ground and specialized for photosynthesis. A leaf with lighter-colored or white patches or edges is called a variegated leaf 7d6235fe94

== Description == 7d6235fe94 Leaf springs can serve multiple suspension functions: location, springing, and to some extent damping as well, through interleaf friction. However, this friction is not well controlled, resulting in stiction and irregular suspension motions. For this reason, some manufacturers have used mono-leaf springs. 7d6235fe94