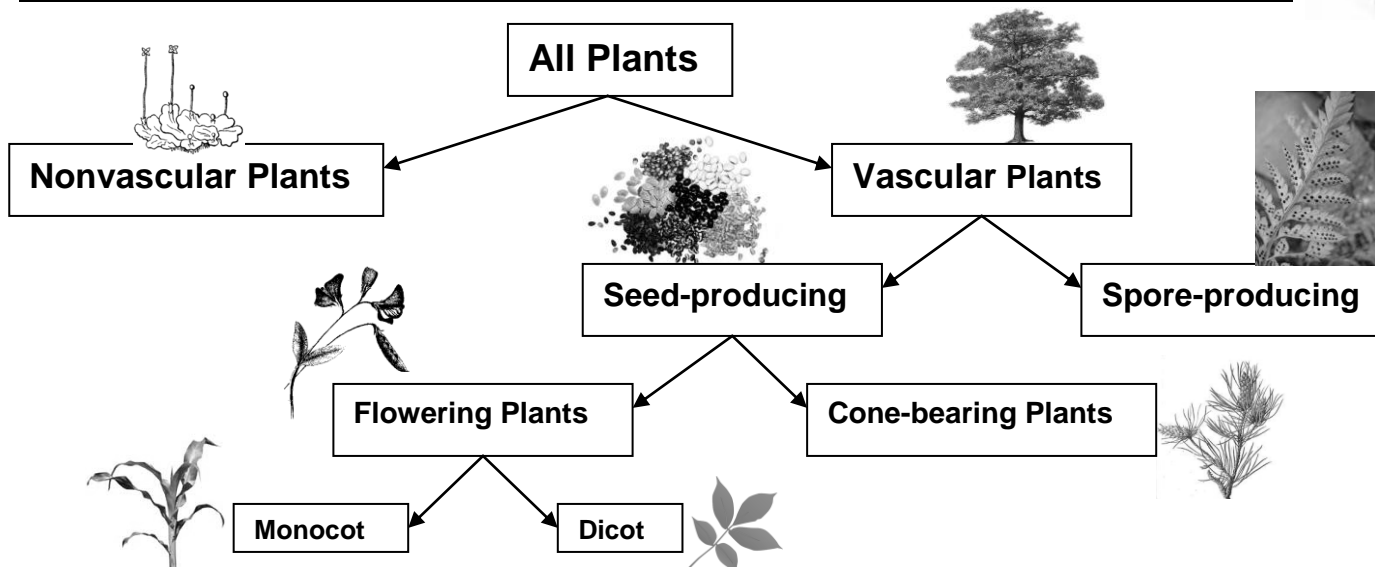


Fast Facts #3 Describing Plants

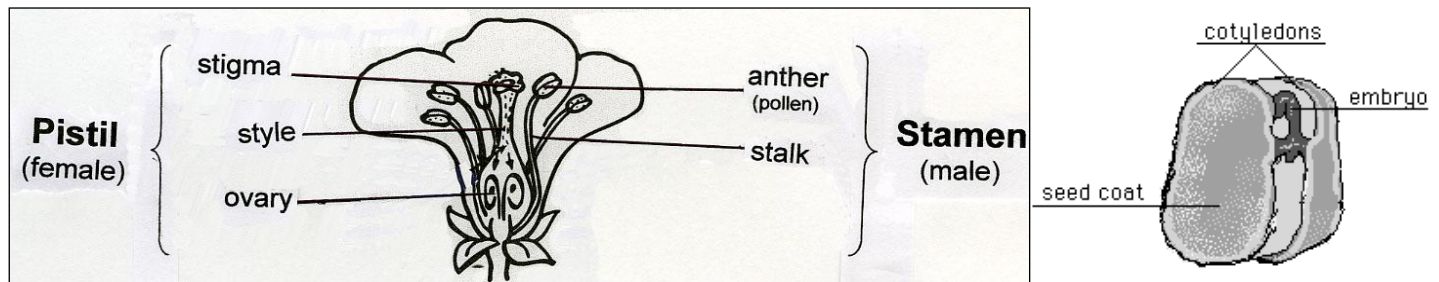
Name _____ Block _____

Plants are classified into groups based on specific structures or characteristics.

Characteristic	Broken into these groups
how they absorb and circulate fluids	vascular or nonvascular
how they reproduce	spores or seeds
method of seed production	cones or flowers
type of seed leaf	monocot or dicot



Nonvascular Plants	Plants that absorb water. (They do not circulate water and nutrients through stems and leaves. Water and nutrients move from cell to cell.) Do not have true roots, stems, or leaves. Usually small plants that carpet the forest floor. Examples are mosses, liverworts and hornworts. They reproduce by spores.
Vascular Plants	The largest group in the plant kingdom. Have true roots, stems, and leaves. Stems can be woody like trees and shrubs. Stems can be herbaceous like grass, dandelion and tomato plants. Have tube-like structures that provide support and help circulate water and food throughout the plant. Xylem transports water and minerals from the roots to the rest of the plant. Phloem transports food from the leaves to the rest of the plant.
Spore-producing	Produce spores for reproduction instead of seeds. Almost all flowerless plants produce spores. Spores are much smaller than seeds. An example is a fern.
Seed-producing	Produce seeds for reproduction. Seed plants make their own seeds. Seeds contain the plant embryo (the beginnings of roots, stems, and leaves), stored food (cotyledons) and are surrounded by a seed coat . New plants grow from their own seeds. There are two groups of seed producers: cone-bearing plants and flowering plants. They are vascular plants.
Cone-bearing Plants	Seeds are found in cones. Conifers never have flowers but produce seeds in cones. These shrubs and trees never produce flowers. Most have needle-like leaves. Most are evergreen and stay green all year. Some of them are very large. Examples are pine, spruce, juniper, redwood, and cedar trees. They are vascular, seed producing plants.
Flower-bearing Plants	Most plants produce flowers and the seeds are produced inside the ovary which is embedded in a flower. The flower becomes a fruit containing the seeds. The seed's food (source of energy to grow) is stored in one or two "seed leaves" called cotyledons . Examples are most trees, shrubs, vines, flowers, fruits, vegetables, and legumes. They are vascular, seed producing plants.
Monocot	Seed leaves have one food storage area and are called monocotyledon or monocot . Flowers have either three petals or multiples of threes. Leaves are long and slender with veins that parallel each other. Vascular tubes are scattered randomly throughout the stem. Examples are grass, corn, rice, lilies and tulips. They are vascular, seed producing, flowering plants.
Dicot	Seed leaves have two food storage areas and are called dicotyledon or dicot . Flowers have four or five petals, or multiples of these numbers. The leaves are usually wide with veins that branch off from each other. Vascular tube structures are arranged in circular bundles within the stem. Examples are roses, dandelions, maple and oak trees. They are vascular, seed producing, flowering plants.



Flowering Plants have special structures for defense, survival, and reproduction.

Purpose	Structure and Function
Defense	<p>Thorns – sharp outgrowths that defend the plant from being eaten by animals</p> <p>Poisons –Fruits and leaves with poisons so they are not eaten by animals. Examples are poison oak, poison ivy, sumac.</p> <p>Thigmotropism – the ability to close its leaves when touched</p>
Survival	<p>Leaves – Leaves are the site for food production. Photosynthesis, respiration, and transpiration take place in leaves</p> <p>Stems – Stems support the plant and hold the leaves up for light. They transport water from the roots to the leaves in xylem tissue. They transport food from the leaves to the other growing parts of the plant through phloem. Stems also function as food storage sites.</p> <p>Roots – Roots anchor the plant in the ground, absorb water and nutrients from the soil, and store extra food for the plant. Root hairs help increase the surface area of the root so it can absorb more water and nutrients. There are two types of roots:</p> <p style="padding-left: 40px;">Fibrous Roots – consist of several main roots that branch off to form a mass of roots (corn, grass, some trees)</p> <p style="padding-left: 40px;">Taproots – consist of one large, main root with smaller roots branching off (carrots, dandelions, cacti)</p> <p>Seeds have special structures that allow them to be dispersed by wind, water, or animals. The seed coat helps protect the embryo from injury and also from drying out.</p>
Reproduction	<p>Flowers – Flowers produce seeds. Many flowers contain male and female parts needed to produce new flowers. Flower petals are often colorful or have a scent to attract insects and other animals.</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p>Stamen – The stamen are male parts of the flower that have an anther on a stalk (filament). The anther produces pollen that contain the sperm cells.</p> <p>Pistil – The female part of the flower that contains: Ovary –contains the ovules where the egg cells are produced Stigma – the sticky top where the pollen grains land Style – the pollen tube grows down this stalk after pollination happens</p> </div> <div style="font-size: 3em; margin-right: 20px;">}</div> <div> <p>On the next test</p> </div> </div> <p>Seeds – Seeds are fertilized ovules from which new plants form. A fruit that forms from the ovary often protects the seeds (apple, peach, pear) .</p>