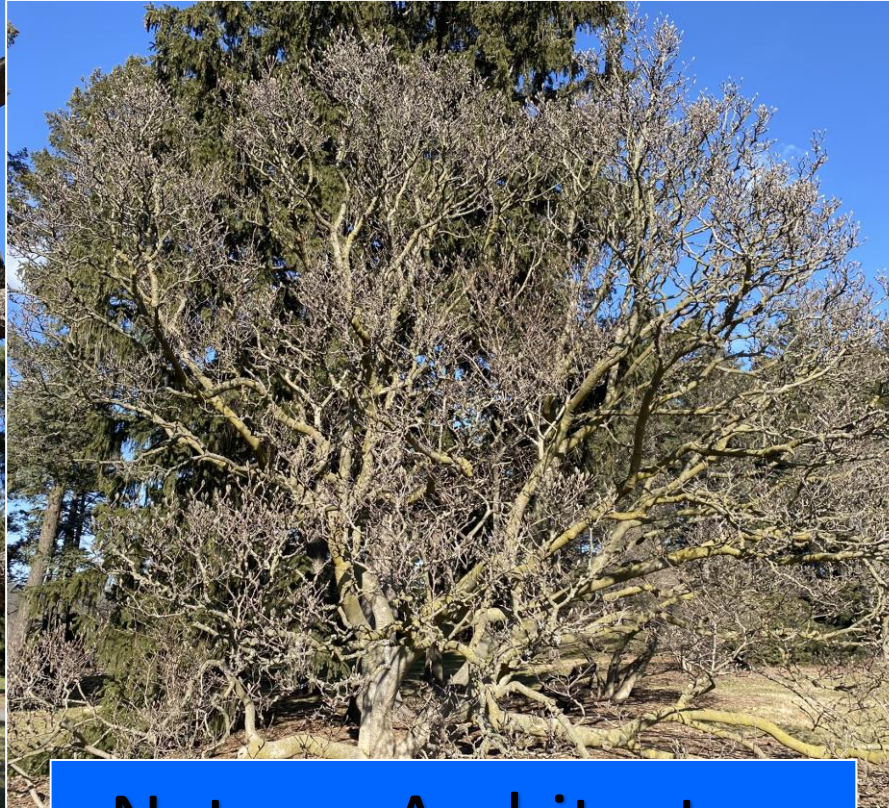




How do trees grow so tall & hold up their limbs?



Nature: Architect or Engineer?



How is it that trees don't blow over in all but the highest winds?



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The short answer is wood. Trees grow tall to capture sunlight. They support their tall and wide growth with the wood that they produce. Most of the tree trunk is dead tissue: this tissue, made of old cells, is wood. The massive roots of trees are woody, also.

The sun's energy fuels photosynthesis—the process where plants make food (sugars) for themselves. New cells are being produced constantly during the growing season. Under the protective bark of a tree is a thin layer composed of the living cells. Moving to the center of the tree trunk, the cells are dead. This strong, dead tissue is made of xylem cells. These cells have strong cell walls—composed of cellulose, hemicellulose and lignin—and all of this dead tissue exists to support the trunk and limbs, the strong roots, also. As the tree grows higher and larger, its leaves can better capture the sun's energy to produce food.