

How to Use a Basal Area Angle Gauge

If trees are growing too close together, they won't get enough nutrients, will grow more slowly, and can be more vulnerable to pests and diseases. A basal area angle gauge is an easy way to figure out how densely packed the trees in your woods are.

"Basal area" is the amount of space the cross-section of a tree trunk takes up. The more basal area per acre in your woods, the denser your trees are packed. It's measured in square feet per acre.

To use a basal area angle gauge, do the following:

1. Cut a 25-inch length of sturdy twine or string.
2. Thread one end of the string through the small hole on the bottom of the angle gauge. Tie a knot in the end of the string to hold the gauge in place.



3. Walk out into your woods and choose a spot at random.
4. Grip the loose end of the string in your teeth and hold the angle gauge out straight from your eye so the string goes taut.



5. Keeping the string taut, turn in a circle. Look through the large hole in the angle gauge at each tree. If the tree's trunk completely fills the rectangle, count it. If you can see

anything other than the tree's trunk through the hole, do not count that tree. For best results, stand still (use your body as the center point) and move the angle gauge in a circle around you.



The tree on the left completely fills the hole in the angle gauge, so it gets counted. But the tree on the right has empty space between it and the edges of the hole in the angle gauge, so it does not get counted.



Tip: Count forked trees as one tree if the fork is more than four and a half feet above the ground (left). If the fork is below four and a half feet, treat each trunk as its own tree (right).

6. When you finish turning your circle, add up the number of trees you counted.
7. If you held your angle gauge portrait style, multiply the number of trees you counted by ten. If you held the gauge landscape style, multiply the number of trees you counted by twenty. The resulting number is the “basal area” (square feet per acre) in the spot of woods you just measured.

8. You can get a better sense of basal area by repeating these steps in multiple spots in your woods. Average your basal areas to get a more accurate overall figure than if you only measured one location.

How much basal area is too much? It depends on the trees in your woods. If you have mostly hardwood trees (trees that lose their leaves), a basal area of around 100 is generally considered healthy. Above 150 is getting pretty dense, and you should consider doing some [thinning to weed out poorer-growing trees](#) and give your best trees a chance to grow faster. In softwoods (evergreen trees), basal areas can be higher, up to 200. Above 200, you should consider a thinning.

Considering a thinning? A good first step is to [hire a forester](#) to get more information about which trees to cut and which ones to leave for the future.