Project Learning Tree®

How Much Carbon Is in a Tree?

English Units

Directions: Use this table to find a rough estimate of the amount of carbon stored in a tree using the tree's diameter at breast height (DBH) and its height (H). The estimated amount of carbon is in pounds. Please note that some values are intentionally blank, as trees with the corresponding dimensions are unrealistic.

Diameter at Breast Height (in inches)

Tree Height (in feet)	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
5	21	24	27	32	39	47	56	67	80	93	109	125	142	162	183	205	229	255
10	22	26	34	44	57	73	92	114	139	167	197	231	265	304	346	391	439	490
15	23	29	40	56	75	99	128	161	198	239	285	336	387	446	509	576	648	724
20	24	32	47	67	94	126	164	207	257	313	374	441	509	588	672	762	858	960
25	24	35	53	79	112	152	199	254	316	385	462	546	631	729	834	947	1,067	1,194
30	25	38	60	91	130	178	235	301	375	458	550	651	753	870	997	1,132	1,276	1,428
35	—	41	67	102	148	204	271	347	434	531	639	756	875	1,013	1,160	1,318	1,486	1,664
40	—	—	73	114	166	231	307	394	493	604	727	861	997	1,154	1,322	1,503	1,694	1,898
45	—	—	—	126	185	257	342	441	553	677	815	966	1,120	1,296	1,486	1,689	1,904	2,133
50	—	—	—	137	203	283	378	487	611	750	903	1,071	1,242	1,438	1,648	1,873	2,113	2,368
55	—	—	—	149	222	310	415	535	672	825	994	1,179	1,366	1,583	1,815	2,063	2,327	2,608
60	—	—	—	161	239	336	450	581	730	896	1,080	1,281	1.486	1,721	1,974	2,244	2,532	2,837
65	—	—	—	—	258	362	485	627	789	969	1,168	1,386	1,608	1,862	2,136	2,429	2,741	3,071
70	—	—	—	—	—	388	521	674	848	1,042	1,256	1,491	1,730	2,005	2,300	2,615	2,951	3,307
75	—	—	—	—	—	415	557	721	907	1,115	1,345	1,596	1,852	2,146	2,462	2,800	3,159	3,541
80	—	—	—	—	—	—	592	767	966	1,188	1,433	1,701	1,974	2,287	2,624	2,985	3,368	3,775
85	—	—	—	—	—	—	628	814	1,025	1,261	1,521	1,806	2,096	2,430	2,788	3,171	3,578	4,011
90	—	—	—	—	—	—	664	861	1,084	1,333	1,609	1,911	2,218	2,571	2,950	3,355	3,787	4,245
95	—	—	—	—	—	—	—	908	1,143	1,407	1,698	2,017	2,341	2,713	3,113	3,541	3,997	4,480
100	—	—	—	—	—	—	—	954	1,202	1,479	1,786	2,121	2,462	2,854	3,276	3,726	4,206	4,714
105	—	—	—	—	—	—	—	—	1,261	1,552	1,874	2,226	2,584	2,996	3,438	3,911	4,414	4,949
110	—	—	—	—	—	—	—	—	1,321	1,625	1,962	2,332	2,707	3,138	3,601	4,097	4,625	5,184
115	—	—	—	—	—	—	—	—	—	1,698	2,050	2,436	2,829	3,279	3,764	4,282	4,833	5,418
120	—	—	—	—	—	—	—	—	—	1,771	2,139	2,542	2,951	3,422	3,927	4,468	5,043	5,654

These estimates are based on the formula: Mc (mass of carbon in the tree) = 0.5 x Mw (mass of the wood), where Mw = 0.55 x V (volume of tree) x Dw (density of wood); V = 0.0567 + 0.5074 x $(CBH/)_2$ x H. It assumes that Dw = 0.6 g/cm3, and that water makes up 45 percent of the tree's mass.