English oak

Quercus robur

IDENTIFICATION EVIDENCE

Leaves have rounded lobes, very short stalks and small lobes at the base. Acorns are carried on long stalks. Bare twigs often end in clusters of buds. Older bark develops deep grooves.

Jays and squirrels use acorns. Leaves feed insects, which may be eaten by other animals. Cavities, crevices and dead wood can provide habitat.

LIMITS AND ALTERNATIVES

Other oak species and hybrids occur in Britain. Compare several features, including acorn stalks, before naming the species.

FOLLOW A SPECIFIC FEATURE

How does the acorn attach to the twig? Compare its long stalk with the very short leaf stalk. Use the Tree identification link on page 36 to check the corresponding species guide.



English oak: rounded leaf lobes and young acorns on stalks. Photo: Mannivu (CC BY-SA 4.0).

Measure leaves, then interpret the spread

You might need: A ruler and leaves or scaled images; calculator or spreadsheet if useful. Decide whether to include the stalk.

A QUESTION TO CHOOSE

How variable is leaf length in a defined set? Choose permitted fallen leaves or an image set with a reliable scale. State whether the blade alone or blade plus petiole is measured.

WORKED EXAMPLE: INVENTED DATA

Six blade lengths are 7.2, 8.0, 8.0, 8.8, 9.1 and 10.5 cm. Their sum is 51.6 cm. Mean = 8.6 cm; median = 8.4 cm; range = 3.3 cm. These numbers illustrate calculations, not a claim about a real species.

BEYOND ONE AVERAGE

Show the distribution with a dot plot or table. Ask how rounding, a curled edge or an unclear scale changes confidence in a difference. More decimal places do not automatically mean more accurate measurement.

FURTHER DEPTH

Keep paired width measurements and make a scatter plot. Consider an outlier before excluding it. State what the data describe and avoid a claim about all trees of the species.

Someone else can handle leaves or a ruler while the learner chooses the rules and analyses the evidence.

INVENTED LEAF DATA · BLADE LENGTH IN cm

7.2	8	8	8.8	9.1	10.5

Mean 8.6 cm | Median 8.4 cm | Range 3.3 cm

Estimate height with a model

You might need: Supplied distances and angles, or an adult-checked clinometer and distance measure. Pilot on a known object.

A QUESTION TO CHOOSE

How could a tree's height be estimated from accessible ground without climbing it? An adult assesses the location, equipment and method first. No measurement should require standing in a road or approaching a dangerous tree.

A SIMPLIFIED TRIANGLE

If the observer and trunk base are on level ground, estimate height as horizontal distance × tan(angle to the top) + eye height. A clinometer measures angle, not height.

WORKED EXAMPLE: INVENTED VALUES

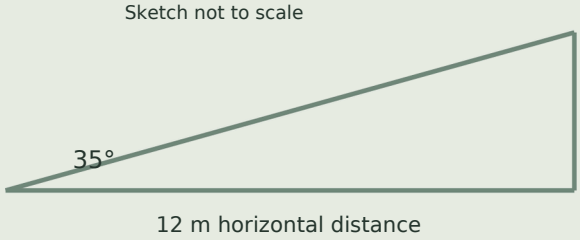
With distance 12 m, angle 35° and eye height 1.5 m, estimated height is about 9.9 m. The result depends on identifying the top, measuring horizontal distance and meeting the level-ground assumption.

TEST THE MODEL

Try the method on a safely measurable object with a known height before a tree. Repeat readings and compare the spread.

FURTHER DEPTH

Explore how an angle error changes the estimate. Sloping ground or an offset crown requires a more suitable model. Supplied angles and distances can preserve the mathematical task when field access is limited.



Eye height: 1.5 m

12 × tan(35°) + 1.5

≈ 9.9 m