



The
carbon
community

Community Science – Tree tagging
A visual guide

Why this work is important

A lot of environmental research relies on the hard work of volunteers capturing research data in the field.

- Many environmental models, used to measure and predict climate change, are built on this data.
- Capturing the data consistently and accurately over time is important.
- The Carbon Community study is seeking to understand how to maximize carbon sequestration
 - The impact of this work will likely be far reaching.

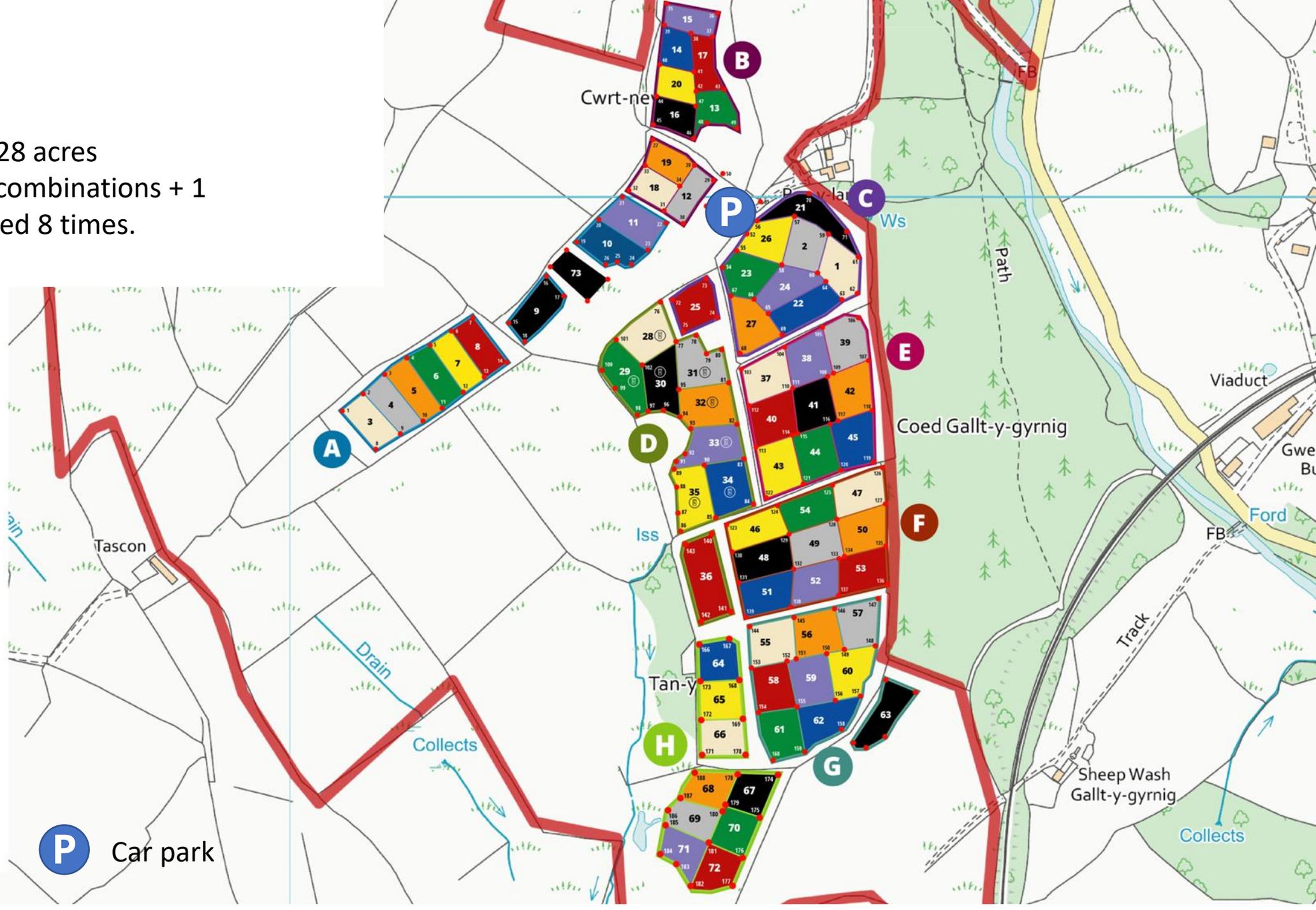


Site Map

72 plots in total, over 28 acres
 8 different treatment combinations + 1 control group, replicated 8 times.

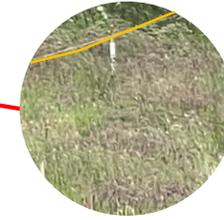
LEGEND

		Control
		Spruce + Basalt
		Spruce + Conifer Soil Inoculation
		Native Broadleaf
		Spruce + Conifer Soil Inoculation + Basalt
		Spruce
		Native Broadleaf + Native Soil Inoculation + Basalt
		Native Broadleaf + Basalt
		Native Broadleaf + Native Soil Inoculation



About each plot

Each plot contains 400 trees. We need to tag the 100 trees closest to the centre post so their progress can be tracked over time.



Posts mark the corners of each plot. String runs between the corner posts to define the plot boundaries.



The centre post: identifies the plot number and marks the centre of the plot.



100 closest trees to the centre post, individually tagged.

About the tree tags



The first two digits of each tag are the plot number

This is plot 01 (of 72 in total)



The last four digits are the tree number

This is tree 0001 (of 100), in plot 1

It is important that:

1. The correct tree tags are applied to the correct plot.
2. Each tree is identified uniquely (i.e. no duplicate numbers) so that it can be tracked over time.

Three tasks to complete

1



Fixing tree tags to
tree stakes

2



Installing tree
stakes

3



Cataloguing and
measuring individual trees

Task 1: Fixing tags to tree stakes



Points to note:

- Tags should be screwed to posts approximately 1in / 2.5cm from the top
- Use only one screw
- Each screw needs a nylon washer to prevent corrosion (stainless steel / aluminium)

Points to note



- Tags should be tight on the post so that they do not move freely
- Try not to mash the heads of the screws
 - Pressing down and using a slow speed on the screwdriver should prevent this.
- Try not to overtighten the screws causing the tree tag to buckle (as shown in the picture).

Why?

- The tags are laser-etched aluminium designed to last 50 years.
- When the posts have rotted, we will need to remove the tags and fix directly to the tree.
 - So being able to get the screw out again and reuse the tag will be important

Check that there are no duplicate tags



- Due to some manufacturing problems, in a few sets of tags, there are some duplicates.
- Each tree must have its own unique number to allow us to track its progress over time.
- The easiest way to ensure that there are no duplicates is to set out the tags in number order as you fix them to the posts.
- There are a few spare tags in the event of missing numbers in the sequence.

We suggest doing these in batches of 25



The tree stakes come in bundles of 25



We've sorted the tree tags into in bundles of 25

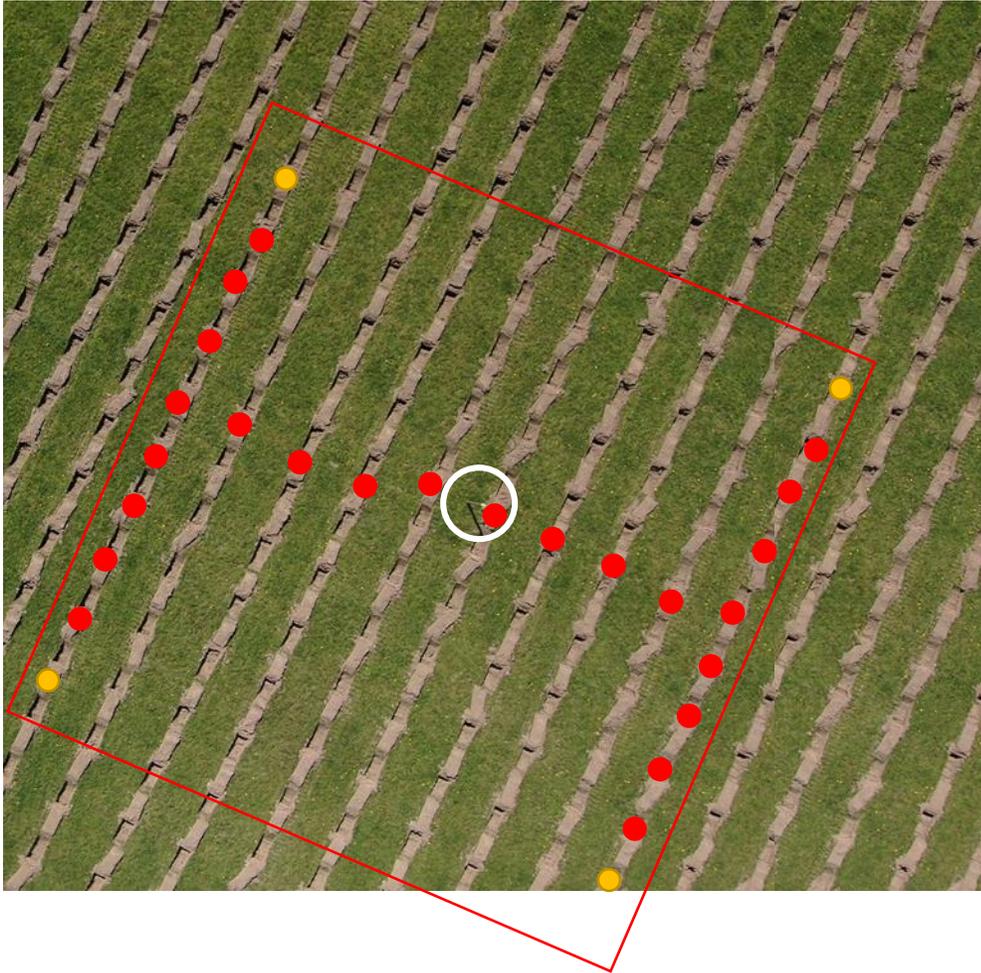


When completed, tie into bundles



- We suggest tying into bundles of 25
- While bundles of 50 work, some people find them too heavy to lift.
- For each plot you should have 4 bundles of 25
- Note the picture shows bundles of 50.

Task 2: Installing tree stakes



Step one: Mark out the 100 trees:

- Starting at the centre post walk 5 trees out, and a further 5 trees up.
- Place a yellow tipped cane in the corner
- Repeat until all 4 corners are marked. This will form an approximate 'square' shape containing the 100 trees closest to the centre post.

Task 2: Installing tree stakes



Step two: check the distance to adjacent plots

- Walk the boundaries of the plot lifting the orange string up to make it visible above the grass.
- Make sure there are a minimum of 3 rows of trees between the edge of the 100 tagged trees and the next plot
- If necessary adjust the shape of the square of 100 trees to fit the boundaries.

Install the tree stakes



Step three: Install the tree stakes:

- Using the wrecking bar, make a pilot hole at the **opposite end of the mound** to the tree
- Using the mallet tap the tree stake in with the **tree tag facing away** from the tree.



Cataloguing and measuring equipment (provided)



Vernier caliper for measuring tree girth

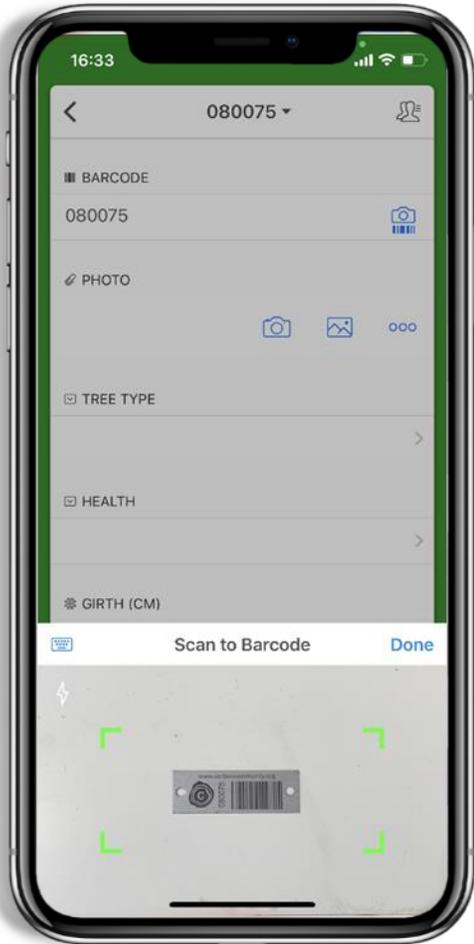


2m fixed rule, for measuring tree height



Tree tagging app, downloaded onto your phone.

Using the App



Using your phone's camera, the app can scan the tree tag barcode, or if you prefer you can enter it manually.

Whichever method you prefer, **please check the number recorded in the app matches the number on the tag** and the first two digits match the plot number.

This is the most critical element of tree tracking to get right!

Taking tree photos

Using your phone's camera, the app can automatically store a photo with each tree record.

Please take one ground-level photo only, unless the tree is diseased, in which case please also take a close up as well.

OK but not ideal

Photo taken
from above



Great!

Photo taken
from ground
level



Tree types

		Oak - <i>Querus</i> (18%)
		Birch - <i>Betula pendula</i> (36%) Toothed edge and light green leaves. Most birch planted on the site were small and have not yet poked above the tree guards.
		Cherry - <i>Prunus Avium</i> (18%) Leaf is oval, toothed and has a pointed tip.
		Alder - <i>Alnus Glutinosa</i> (18%) Round leaves with irregular blunt teeth. Leaf tip is never pointed. Sometimes leaf tip is indented in a racket shape.
		Aspen - <i>Populus Tremula</i> (5%) Rounder leaves with irregular blunt teeth, pointed tip. Young ones look a bit like a heart.
		Rowan - <i>Sorbus aucuparia</i> (4%) Leaves are arranged like a feather. Onsite, most of the Rowan visible above the tree guards.

Use the leaf / tree recognition chart that you will be provided with on site to identify individual trees.



You will have to open the tree shelter (broadleaf plots only) to identify and measure trees.

If you really cannot identify a tree, leave the field blank.

Tree health

The app asks you to grade the tree's health into one of four categories:

- ⋮  Vigorous The 10% of trees that are the most vigorous growing
- ⋮  Healthy Growing well – the majority of trees
- ⋮  Sick Clearly suffering, but not dead
- ⋮  Dead No signs of life, no green anywhere on the plant



Some examples of 'Sick' trees



This tree is classified as 'sick' – it is clearly suffering, but is showing growth at the tips.



This one has a pest infestation and is also classified as 'sick'

How to measure a tree's girth

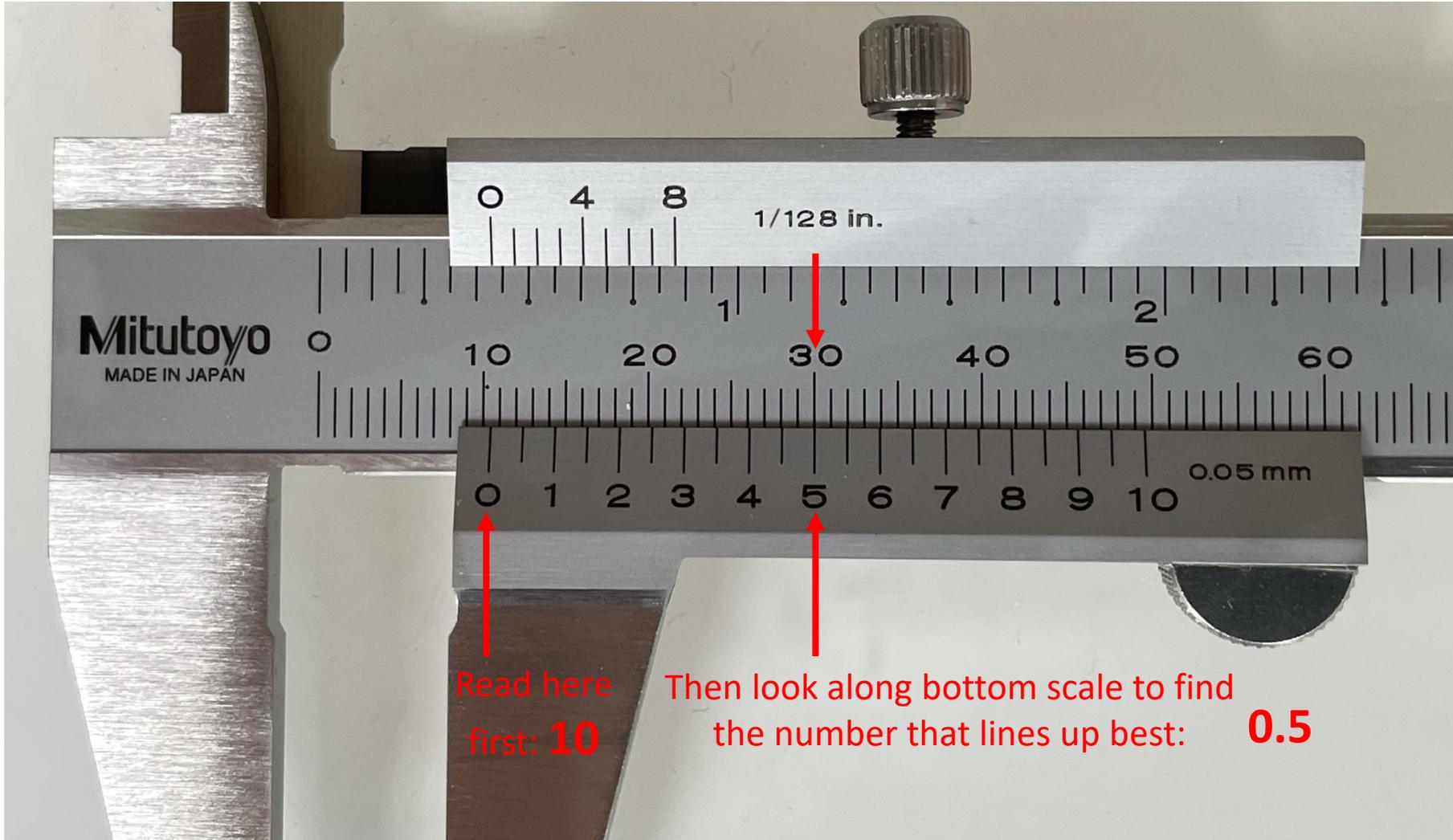
Measure at the base of the tree



Slide the caliper out and read the girth to one decimal point.

Reading = 9.5mm

How to read a Vernier scale



Answer: 10.5mm

How to measure a tree's height

Measure from the base of the tree to the top of the woody bit



This is between 88 and 88.5cm – so round to the nearest half centimetre = 88.5cm

Replacing the tree shelter



After you've taken your measurements, please replace the tree shelter as follows:

- With the cane inside the shelter
- With the leaves and branches of the tree carefully tucked inside the shelter
- With the base of the shelter pressed gently into the bottom of the earth to stop it blowing away.



Thank you

We thank you for your help!



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