

# Trees and Carbon Storage

## Background Information

One of the fantastic things that trees do is take in carbon dioxide from the atmosphere. This means that trees can help us fight climate change. They do this through a process called photosynthesis which all plants do. When plants photosynthesise they



take in carbon dioxide from the air and give out oxygen. This is very useful, not only because we breathe oxygen, but because we have too much carbon dioxide in the atmosphere causing climate change. The trees use the carbon from carbon dioxide to build their bodies! So planting lots of trees can help us fight climate change.

Trees are something called a Carbon Sink. To learn more about carbon sinks check out our #DynamicEarthOnline post [here](#).

## Activities

### Tree Identification

Identifying trees can be tricky, but some things to look at are the size and shape of the leaves and the colour of the bark. There are some brilliant resources on the [Woodland Trust website](#) to help you!

### Carbon Storage

Once you have identified your tree species, you can then work out roughly how much carbon is stored inside it. Print out the step by step guide at the end of this pack to help you.

### What you will need:

- Tape measure
- Calculator
- Instruction sheet





# Measuring trees

Choose a tree which you can see the top of

<b>Draw a leaf from your tree</b>	
<b>Identify the species</b>	

Measure your tree

<b>Circumference</b> (m)	
<b>Height</b> (m)	

## Circumference:

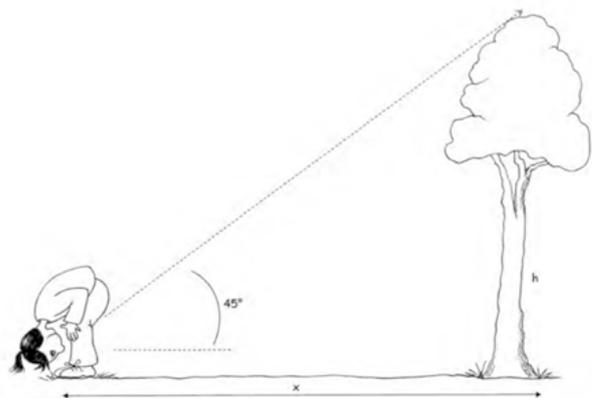
- Wrap the tape measure around the tree at the height of your shoulders
- Read off the size in meters **not** centimetres



## Height:

- Walk away from the tree and regularly bend forward and look through your legs back at the tree
- If you can't see the top of the tree move further away and try again
- If you can see sky above the tree move closer and try again
- When you can just see the top of the tree measure the distance from you to the tree trunk.

This is roughly the tree's height!





# Carbon in trees

Now we can calculate how much this tree weighs

<b>Radius (m)</b> = Circumference ÷6		
<b>Volume (m<sup>3</sup>)</b> = 3 x radius x radius x height		
<b>Density (kg/m<sup>3</sup>)</b> Copy from table below		
<b>Weight (kg)</b> = Density x volume		

How much of this weight is stored CO<sub>2</sub>

<b>CO<sub>2</sub> stored (kg)</b> = Weight ÷ 2		
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Wood densities kg/m <sup>3</sup>	
Alder	550
Ash	710
Beech	700
Birch	670
Chestnut	560
Lime	560
Elm	575
Fir	470
Hazel	670
Holly	750
Larch	500
Maple	470
Oak	740
Scots Pine	510
Sycamore	500
Willow	500

Can your tree use trap the CO<sub>2</sub> use as much carbon as any of these things produce?

Action	Amount of CO <sub>2</sub> produced (kg)
Taking a 12 hour flight.	3400
Using a year's worth of non-recycled	75
Drying a load of clothes in a tumble	100
Using a mobile phone for an hour a day.	1250 (per year)
Building a Land Rover.	35000

