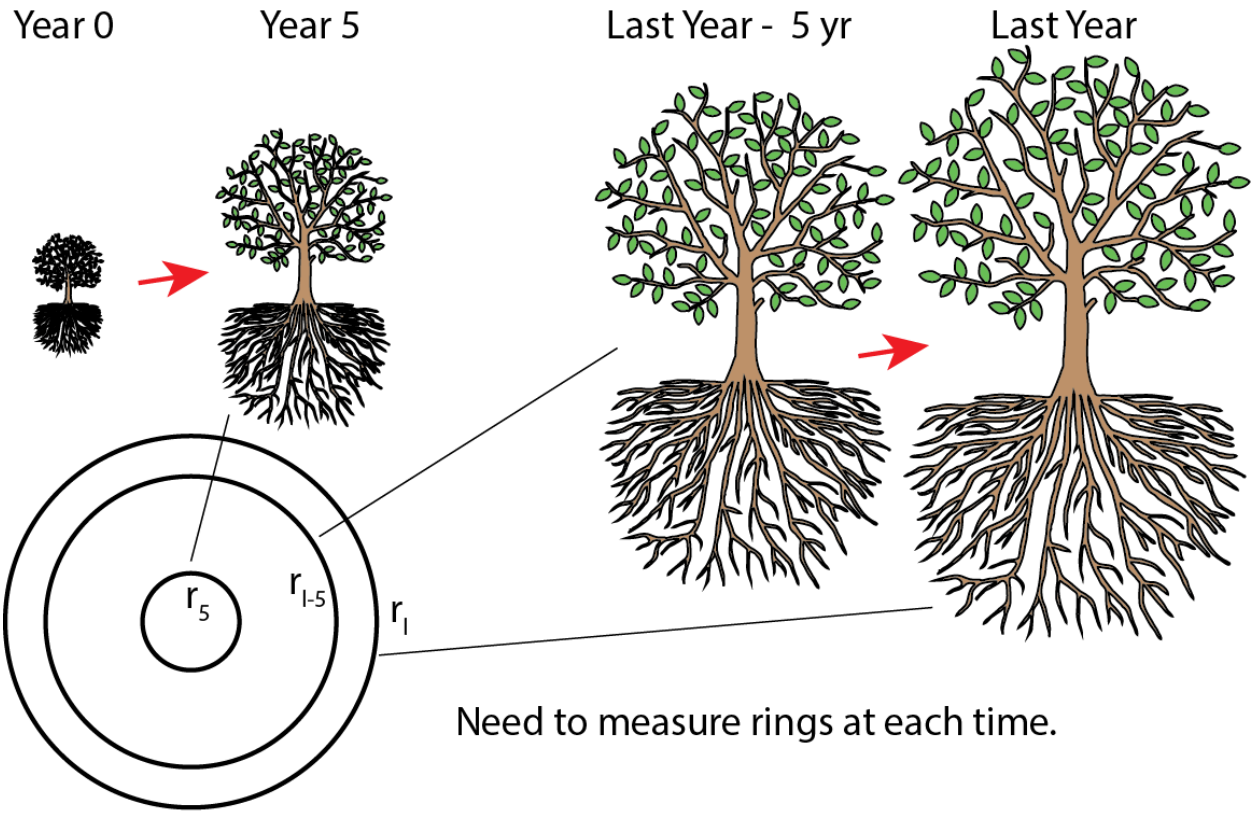
Carbon Sequestration Challenge Question

In questions #5 and #6 we assumed that a tree sequesters the same amount of carbon every year. We can test this by comparing the **amount of wood** added in first 5 years to the **amount of wood** added in the last 5 years of the tree's life cycle and deriving the carbon sequestered at each stage.

See example image below.



a. How much wood was added, and how much carbon was sequestered, in the **first 5 years**?

	First 5 years
What is the radius?	r_5 = _____ cm
What is the biomass?	$Total\ Biomass = 33811.8 \frac{kg}{m^2} \bullet radius\ of\ cookie\ (m)^2$ ***IMPORTANT: Convert radius (cm) to meters (m)*** = _____ kg
What is the carbon sequestered?	$Total\ Carbon = Total\ Biomass\ /\ 2$ = _____ kg

b. How much wood was added, and how much carbon was sequestered, in the **last 5 years**?

	Final size **(starting point to edge)**	**5 years before final size**	**Difference** **(additional growth in last 5 years)**
What is the radius?	(copy from previous questions) r_l = _____cm	r_{l-5} = _____cm	(column 2 – column 1) = _____cm
What is the biomass?	(copy from previous questions) kg	$Total\ Biomass = 33811.8\frac{kg}{m^2} \bullet radius\ of\ cookie\ (m)^2$ ***IMPORTANT: Convert radius (cm) to meters (m)*** kg	(column 2 – column 1) kg
What is the carbon sequestered?	(copy from previous questions) kg	$Total\ Carbon = Total\ Biomass\ /\ 2$ kg	(column 2 – column 1) kg

c. Which was greater → the wood added / carbon sequestered in the first 5 years or the last 5 years?

d. Why do you think the amount of wood added / carbon sequestered changes over the life of a tree?