

Global Carbon Cycle Mini-Activities

	How Big is a Petagram??	Magnitude of Human Presence	Turnover Rate & Residence Time
Purpose	To help conceptualize the 'size' of a petagram of carbon.	To calculate the impact of human presence (not actions) on the global carbon cycle.	To understand turnover rate and residence time, in the context of the global carbon cycle.
Overview	Students assume that they have a 'brick of carbon', which is the same dimensions and weight of a standard building brick. Students then calculate the volume of 'carbon bricks' it would take to equal 1 Petagram of carbon.	Students use calculations to estimate the amount of carbon stored in and released by the global human population. Students make comparisons to storage and release by other carbon cycle components.	Students discuss as a class the concepts of turnover rate and residence time using a simplified example. Students use the <i>Global Carbon Cycle Diagram</i> to calculate turnover rate and residence time for each pool.
Time	15 min (teacher directed) 30 min (student directed)	20 min (teacher directed) 60 min (student directed)	30 min
File Type	Spreadsheet (.xls)	Spreadsheet (.xls)	Text document (.pdf)