Mauna Loa Atmospheric CO_2 Concentrations

STUDENT PAGE

NAME _____ DATE _____

Since 1958, scientists have measured the amount of CO_2 in the Earth's atmosphere from a site on the Mauna Loa volcano in Hawaii. This site is one of the best locations in the world for measuring CO_2 because there are no plants or human activities nearby to influence the measurements. Any volcanic venting of gas may be excluded from the record. The Mauna Loa data are a precise record of the concentration of atmospheric CO_2 in the region.

Using the data in the table, graph the concentrations of CO_2 for May and October from 1958 to 2022. Using a different color, graph the annual average for each year.

	May	Oct	Annual Average
1958	317.50	312.44	--
1959	318.29	313.26	315.98
1960	320.03	313.84	316.91
1961	320.58	315.38	317.64
1962	321.01	315.42	318.45
1963	322.24	315.99	318.99
1964	322.24	316.79	--
1965	322.16	317.30	320.04
1966	324.01	318.10	321.38
1967	325.00	319.31	322.16
1968	325.57	320.25	323.05
1969	327.34	321.78	324.63
1970	328.07	323.16	325.68
1971	328.92	323.57	326.32
1972	330.07	325.06	327.45
1973	332.48	327.18	329.68
1974	333.09	327.37	330.25
1975	333.96	328.34	331.15
1976	334.87	328.94	332.15
1977	336.74	331.16	333.90
1978	338.01	332.55	335.51
1979	339.47	333.86	336.85
1980	341.46	336.02	338.69
1981	342.91	336.86	339.93
1982	344.13	337.86	341.13
1983	345.75	339.99	342.78
1984	347.43	341.35	344.42
1985	348.93	342.80	345.90
1986	350.21	344.17	347.15
1987	351.84	346.36	348.93
1988	354.22	348.88	351.48
1989	355.67	349.99	352.91
1990	357.16	351.18	354.19
1991	359.33	352.21	355.59
1992	359.66	353.31	356.37
1993	360.28	353.99	357.04
1994	361.68	355.99	358.89
1995	363.79	357.76	360.88
1996	365.41	359.60	362.64
1997	366.79	360.77	363.76
1998	369.30	364.23	366.63
1999	371.00	365.13	368.31
2000	371.82	366.73	369.48
2001	374.02	368.09	371.02
2002	375.55	370.25	373.10
2003	378.35	373.01	375.64
2004	380.63	374.24	377.38
2005	382.28	376.88	379.67
2006	384.95	379.06	381.84
2007	386.39	380.81	383.55
2008	388.45	382.73	385.34
2009	390.18	384.38	384.35
2010	392.94	387.18	389.78
2011	394.16	389.00	390.45
2012	396.74	391.05	392.46
2013	399.78	393.70	395.19
2014	401.78	396.03	397.12
2015	403.96	398.29	399.41
2016	407.72	401.59	402.85
2017	409.69	403.63	405.00
2018	411.24	406.00	407.38
2019	414.66	408.52	411.43
2020	417.31	411.51	414.24
2021	419.13	413.93	416.45
2022*	420.99	415.79	418.56

Mauna Loa Observatory, NOAA Global Monitoring Division.

Source: National Oceanic and Atmospheric Administration. https://www.esrl.noaa.gov/gmd/ccgg/trends/data.html

*Due to an eruption of the Mauna Loa Volcano in November of 2022, measurements from Mauna Loa Observatory were suspended. Observations starting in December 2022 are from a site at the Maunakea Observatories, approximately 21 miles north of the Mauna Loa Observatory.

CAREER CORNER

CARBON MODELERS work with forest owners to quantify the carbon being stored or sequestered in their forest. Using this information, owners sell "carbon credits" to companies that emit carbon dioxide (and are required to offset their emissions by buying credits) as a way to reduce overall carbon emissions.

I LOVE MY GREEN JOB!