

First, you harvest the Antarctic ice by drilling a deep hole in the ice sheet, and you separate the ice core into shorter segments. After you store the ice core segments and transport them to the lab bench, you melt the core segments with a hot wire wrapped around the core inside a gas chamber. You suction the gas into a canister. Second, you perform mass spectrometry on the gas in the canister corresponding to the segment. Finally, you calculate the ratio of oxygen isotopes in the gas, which is correlated with average atmospheric temperature when air bubbles were trapped in the ice. Since you know that the deeper the air bubbles, the older the air trapped inside, you can graph the average air temperature versus time over the centuries.