Raven Hill DISCOVERY CENTER
WHERE SCIENCE, HISTORY AND ART CONNECT

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Raven Hill Discovery Center is a 501(c)(3) tax-exempt corporation.

Mission: Raven Hill provides a place that enhances hands-on and lifelong learning for all ages by connecting science, history & the arts.

Carbon dioxide

Carbon dioxide is a colorless gas that is more dense or heavier than air. Carbon dioxide consists of one carbon atom bonded or attached to two oxygen atoms. It occurs naturally in Earth's atmosphere in small amounts, although carbon dioxide is becoming a very significant long-lived greenhouse gas in Earth's atmosphere. We produce carbon dioxide, when our bodies break down food and release energy. The process is called respiration. Plants take in carbon dioxide during photosynthesis or the food making process. Carbon dioxide was the first gas to be described as a discrete substance in about 1640. You can easily make carbon dioxide by mixing baking soda and vinegar. The bubbles produced are bubbles of carbon dioxide. In a small glass, put a teaspoon of baking soda. Add one tablespoon of vinegar and watch the bubbles form. Have an adult lower a lighted match into the glass and it will go out, because the carbon dioxide fills the glass and there is no oxygen in the glass, which the flame needs to burn. The carbon dioxide stays in the glass for a while, because it is heavier than the air. Clean your glass out and make another batch of carbon dioxide. Even though you can't see it, it is there in the glass above the liquid. Ask your adult to "pour" the invisible carbon dioxide gas onto a lit candle. Don't pour the liquid, just the carbon dioxide gas above the liquid. The candle goes out. You might have to practice a couple times. Soda acid fire extinguishers were invented in France around 1866 and used carbon dioxide gas to put out fires.

1 Gather supplies


2 Mix soda & vinegar


3 Carbon dioxide gas


4 Pour gas on flame


5 CO_2 sinks-smothers flame