

## Handout M04-1 Answer Key. Why does the candle go out?

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| <p>A. Describe what you observed when you mixed vinegar and baking soda. <b>The mixture foamed. Then a white substance accumulated at the bottom of the container, and it was covered by a clear liquid.</b></p>   |
| <p>B. Describe what you observed when you were lighting the candle in the container after vinegar was added. <b>It was impossible to light... unless the air in the room was turbulent or someone blew into the container.</b></p>   |
| <p>C. Describe any techniques you used to light the candle in the container, and explain how well each technique worked. <b>This is a fun part of the experiment. Students may try moving more quickly; this won't work. They may try tipping the container sideways; this may work because you are pouring some of the carbon dioxide out. They may also try taking the candle out and pouring the carbon dioxide onto the lighted candle on the tray; that will probably extinguish the flame.</b></p> |
| <p>D. Use the Fire Triangle to explain your observations. <b>A chemical reaction produced carbon dioxide from vinegar and baking soda. Carbon dioxide is heavier than oxygen, so it stays in the container while the oxygen is pushed out. Without oxygen, the candle cannot be lit.</b></p>   |