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Honors Chemistry

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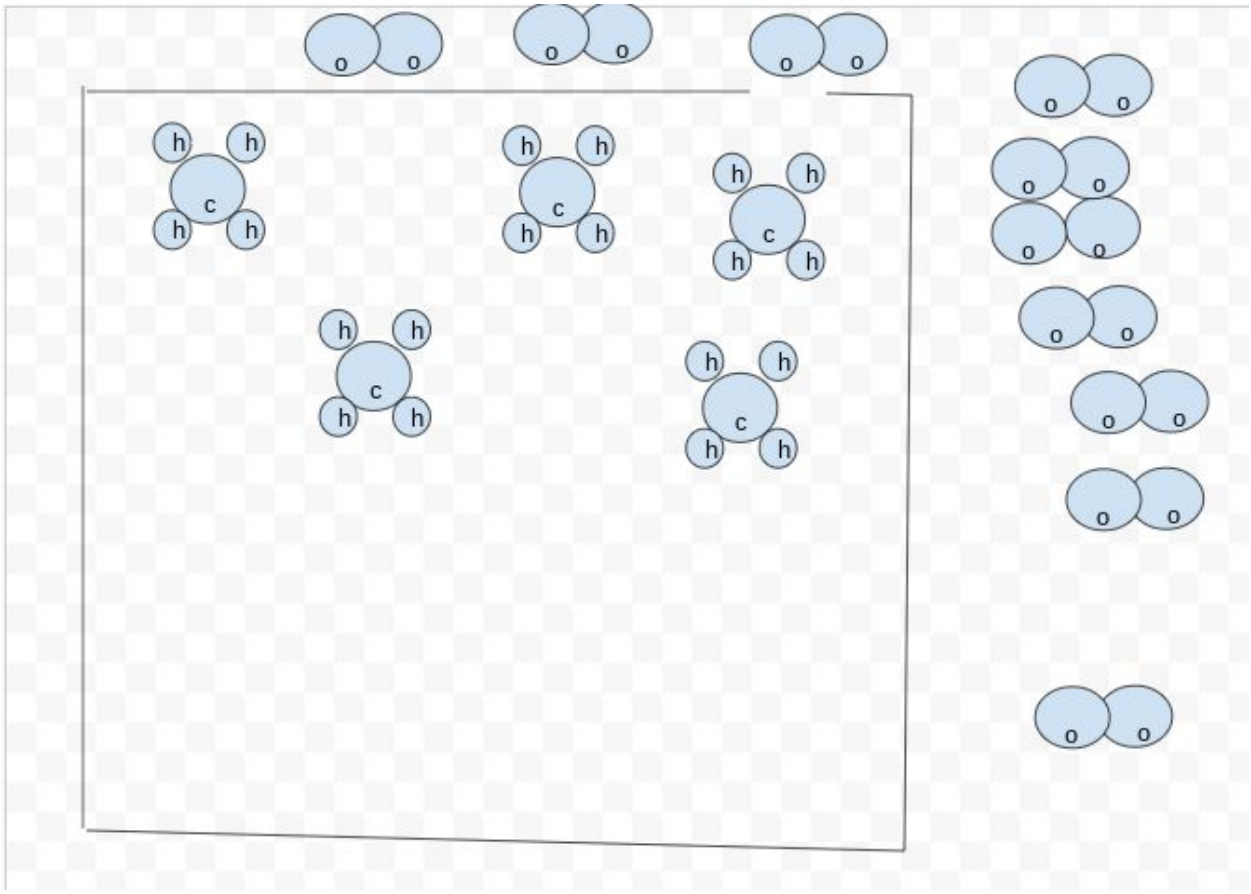
The exploding coffee can is a demo that involves filling a coffee can, with a hole drilled into it, with natural gas. The flame then shoots out the hole and slowly gets smaller and smaller until it recedes into the can. Then the can explodes and flies into the air. The natural gas is mostly made of CH_4 and it combusts with O_2 to form CO_2 and H_2O. The balanced equation is $CH_4+2O_2= CO_2 + 2H_2O$. When the flames leap out from the coffee can, there is an excessive amount of ch4 and the reaction is limited by the amount of oxygen so it cannot burn as quickly. As the reaction burns more oxygen can enter the coffee can and the flame gets smaller because a larger amount of oxygen makes a smaller and hotter flame until there is the correct amount of oxygen for the chemical reaction, then all of the remaining CH_4 combusts in one moment resulting in the explosion. This reaction is a type of combustion, where some material with Carbon and Hydrogen react with Oxygen to form CO_2 and H_2O.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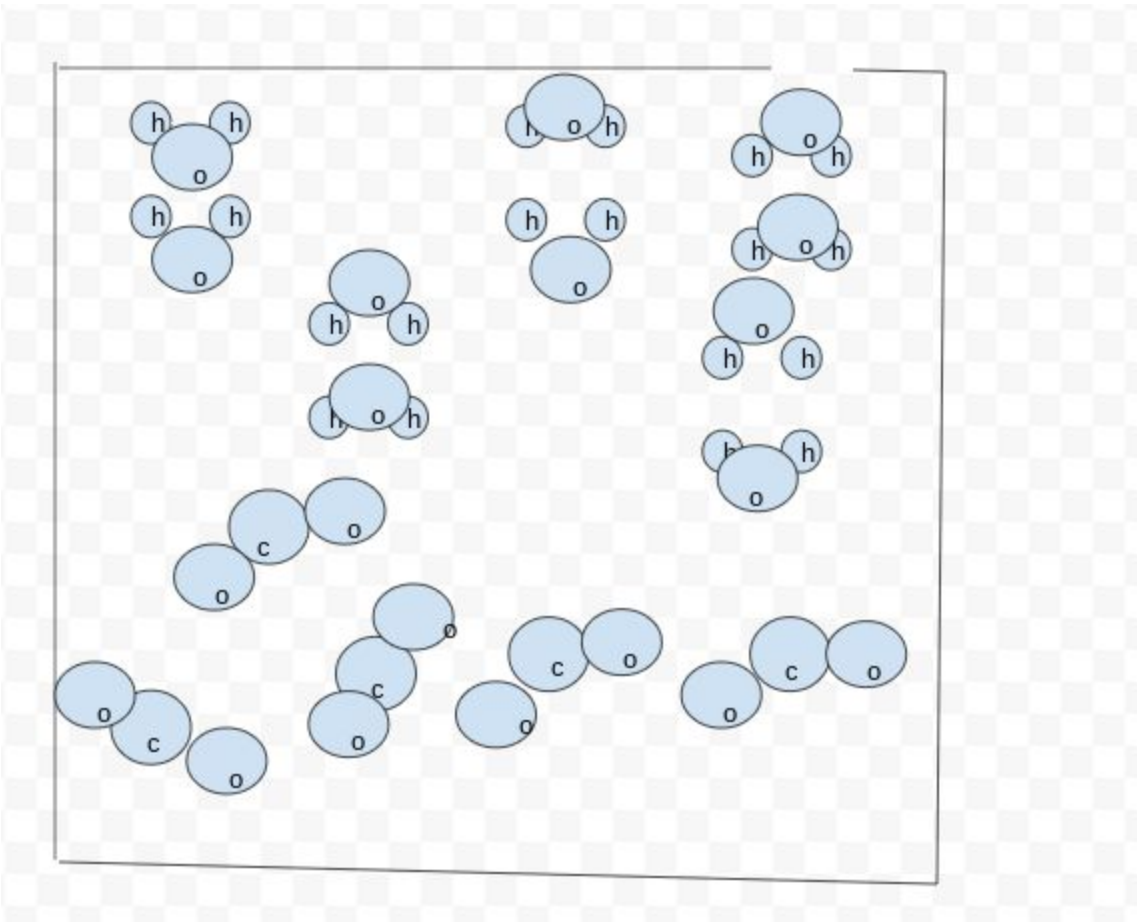
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