Activity 1.2: Organic molecules card game

Background information

The molecules you will make in this game may or may not be actual molecules found in nature. There are hundreds of thousands of organic molecules in the world, so your molecules might very well be real ones. If they are not, they will at least be very similar to real ones.

Here is what the letters stand for: H=hydrogen, C=carbon, O=oxygen, N=nitrogen, Cl=chlorine, Br=Bromine, F=fluorine. Notice how many hydrogen cards there are in the game. 90% of all atoms in the universe are hydrogen!

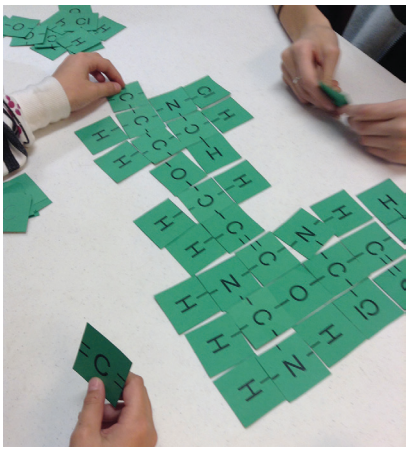
The lines on the cards represent electrons that the atom would like to share with another atom.

You will need:

- copies of the playing card patterns printed onto card stock, then cut them apart into individual squares.

Note: The game can accommodate 2-6 players. If you have more than six students and decide to make more than one copy of the game, you may want to consider making each set of cards a different color. If all of your sets are the same color, there is a high likelihood that cards will get placed into the wrong deck and you will end up with one set having too many cards and another too few, and the only way to straighten them out will be to painstakingly count all the cards and compare each set to the original patterns. Life is too short to spend time counting cards. Make your sets different colors.

Instructions



Give each player 5 cards. The rest go in a draw pile. Put one of the carbons (with no double bonds) face up to be the starter card. The players take turns laying down cards, trying to get rid of all their cards. The first player to get rid of all their cards wins. HOWEVER, the last card he lays down MUST complete a molecule in order to win the game. If a player lays down his last card on an incomplete molecule, he must then draw another card. He may not lay this new card down immediately, but must wait until his next turn to play it.

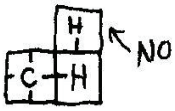
The lines represent bonds. You must match single bonds to single bonds and double bonds to double bonds. The molecule is complete when no bonds are "left hanging." Each bond (line) must have an atom attached to it.

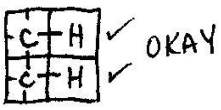
Notice on the double bond O that there are dotted lines. This is so you can turn the card caddy-corner and match the double bond with two single bonds.

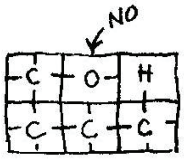
If a player cannot lay down a card, he must take one from the draw pile. He may lay this card down immediately if he can do so.

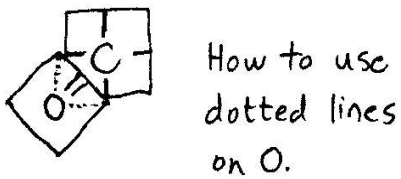
If a molecule is finished and all players are still holding cards, simply begin another molecule. Remember, you must use a single bond carbon (four lines) to begin a new molecule.

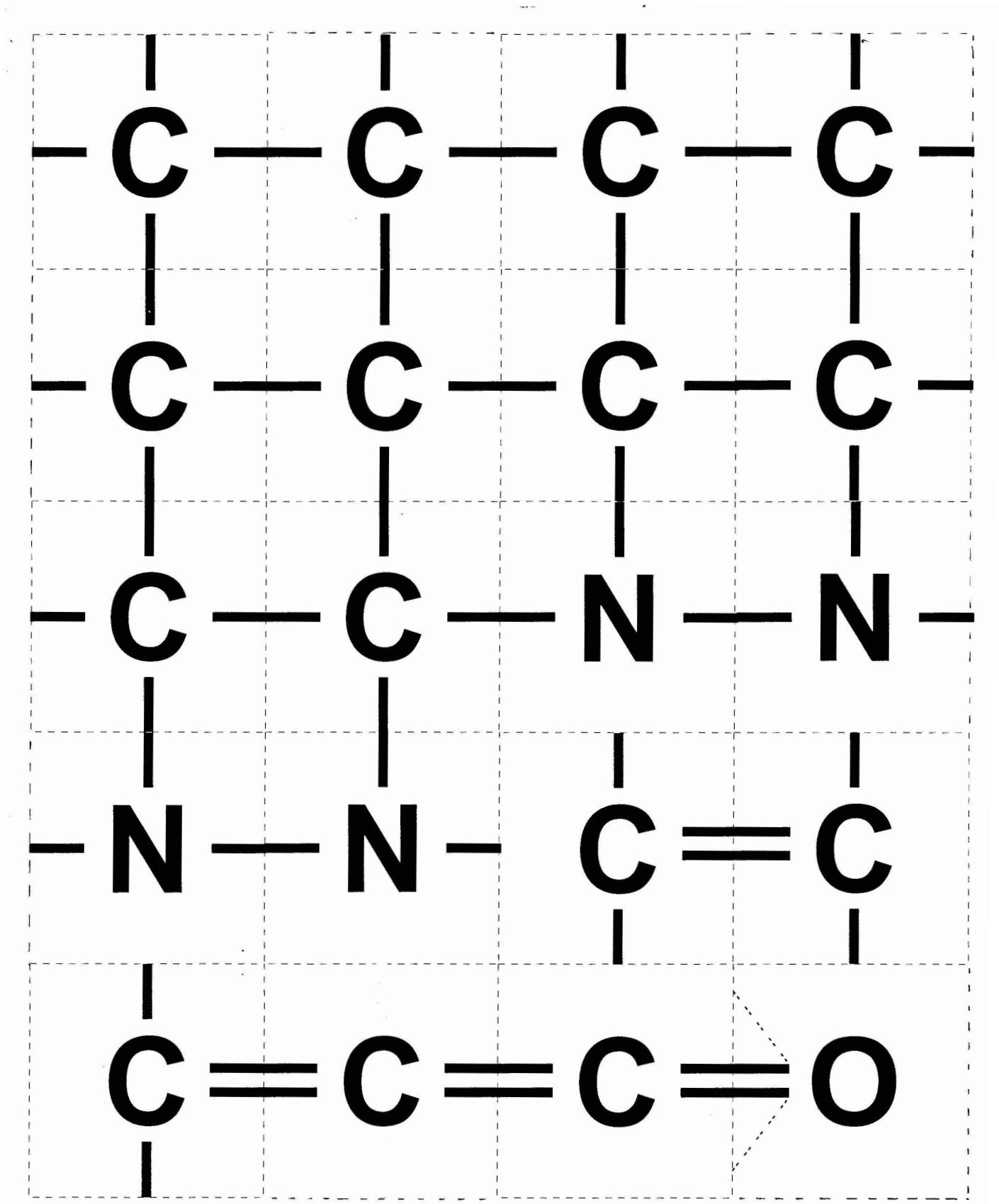
In order to win the game, a player must lay down his last card *as the final atom in a molecule.*



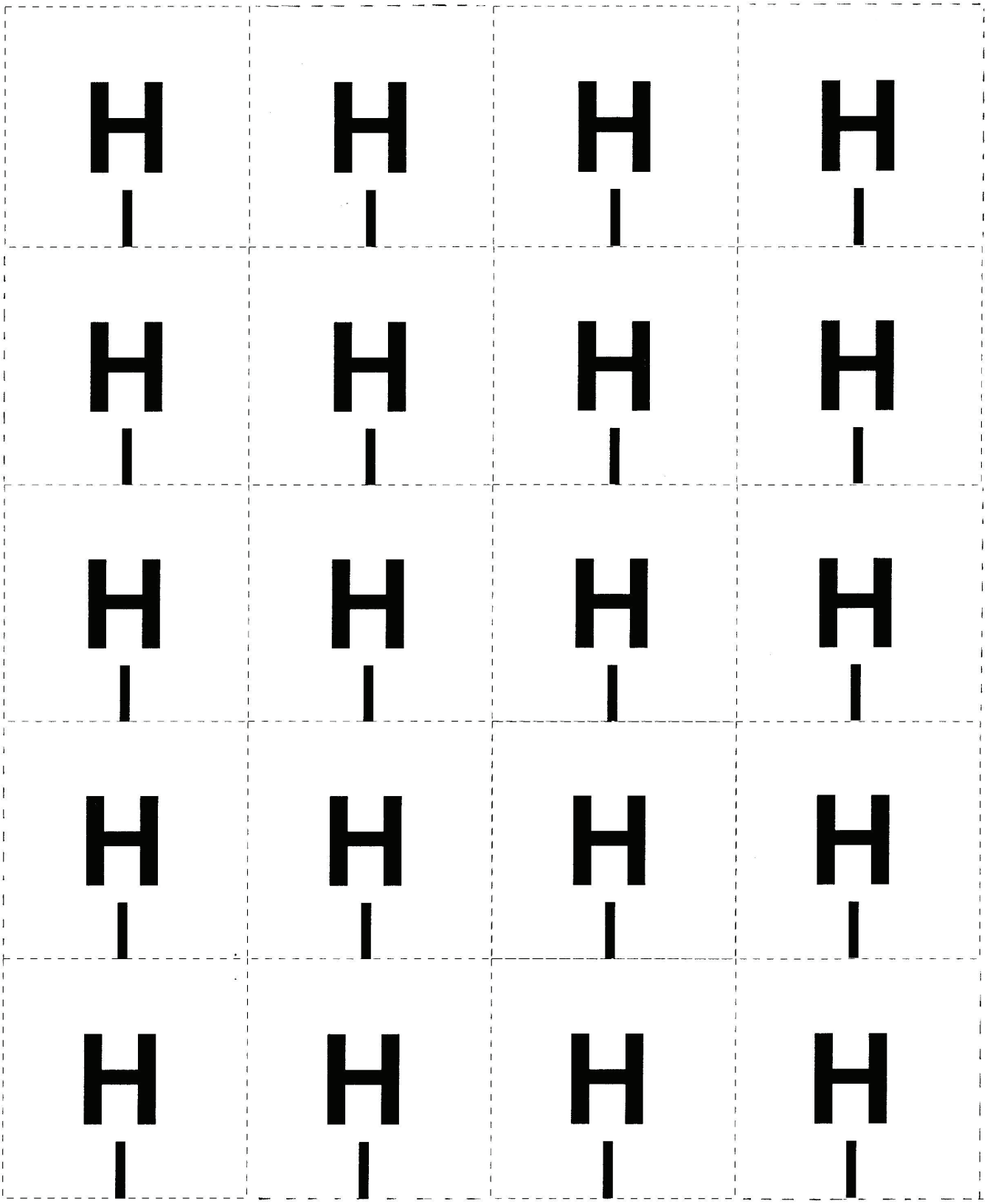








Make one copy (per game) on card stock.
If you are making mulitple copies of the game, make each game a different color (so you can easily tell which cards belong to which set).



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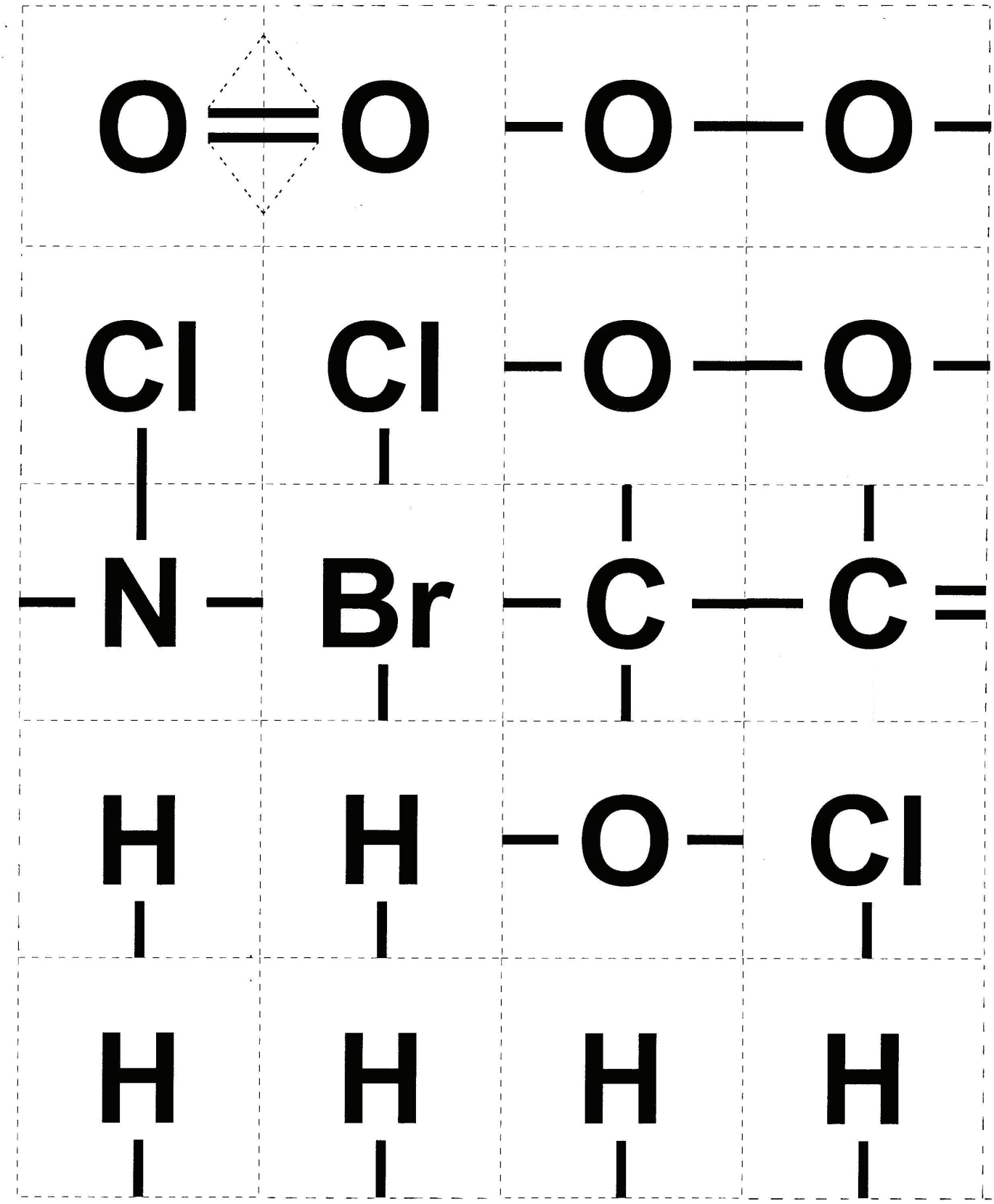

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