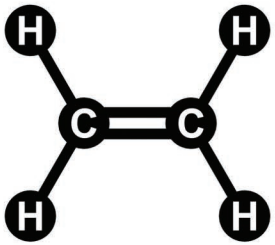
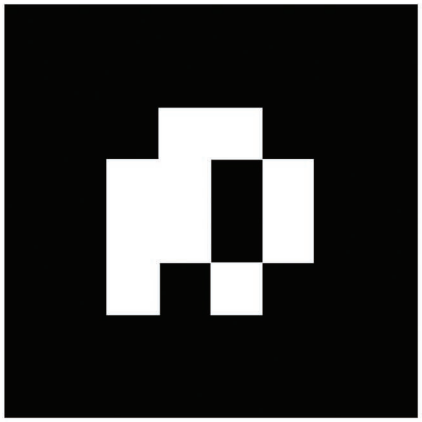



# $C_2H_4$ Ethylene

Imagine ethylene, $C_2H_4$, in three-dimensions. What are the hybridizations of the carbon atoms and what are the bond angles?



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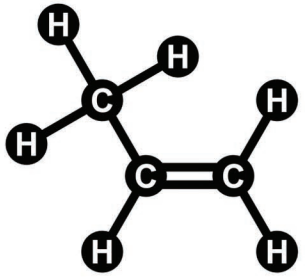
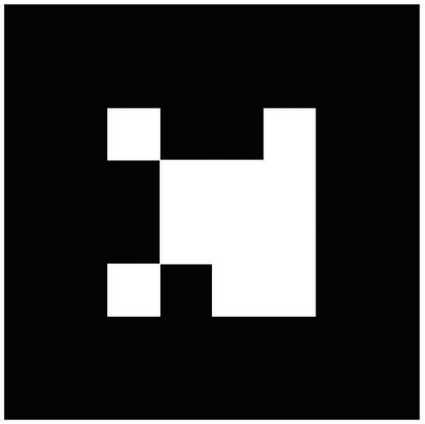



# $CH_3CHCH_2$ Propylene

Imagine propylene, $CH_3CHCH_2$, in three-dimensions. What are the hybridizations of the carbon atoms and what are the bond angles?



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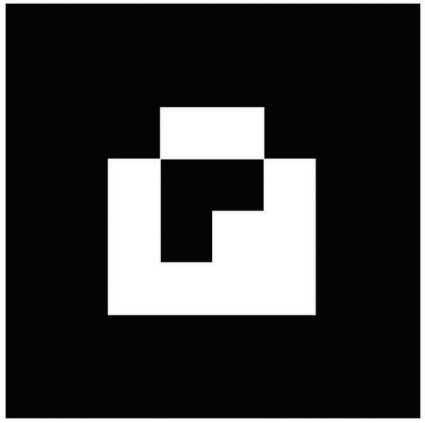
# $C_2H_2$ Acetylene

Imagine acetylene, $C_2H_2$, in three-dimensions. What are the hybridizations of the carbon atoms and what are the bond angles?



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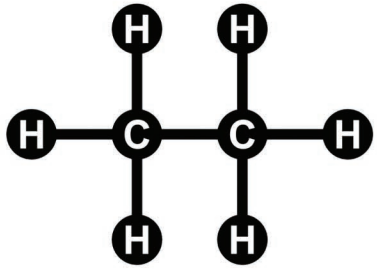
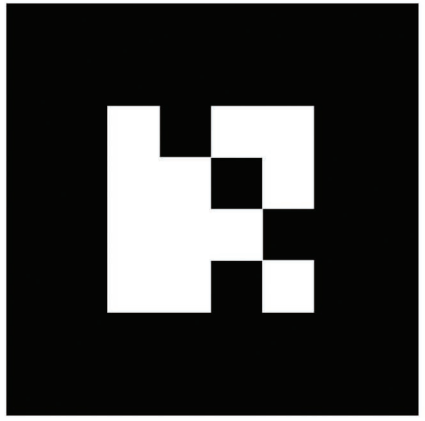



# $C_2H_6$ Ethane

Imagine ethane, $C_2H_6$, in three-dimensions. What are the hybridizations of the carbon atoms and what are the bond angles?



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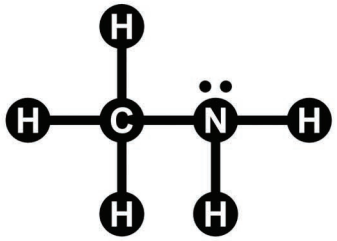
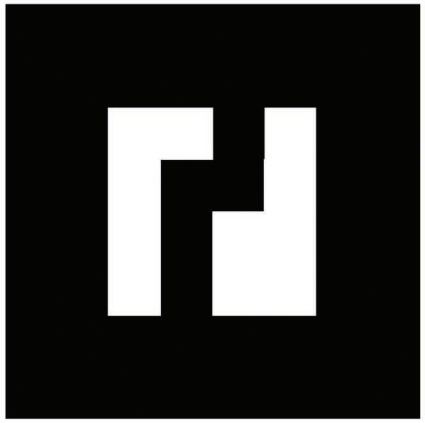



## $CH_3NH_2$ Methylamine

Imagine methylamine, $CH_3NH_2$, in three-dimensions. What is the hybridization of the carbon and nitrogen atoms and what are the bond angles?



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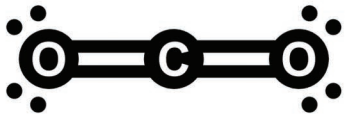
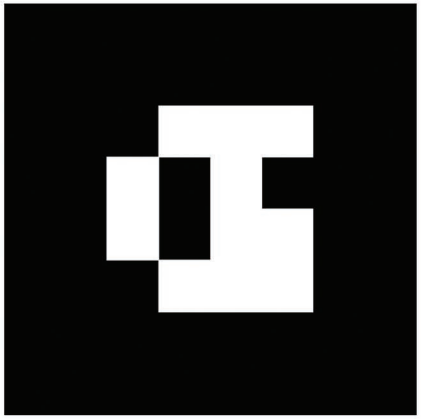



## $CO_2$ Carbon Dioxide

Imagine carbon dioxide, $CO_2$, in three-dimensions. What are the hybridizations of the carbon and oxygen atoms and what are the bond angles? Are the two adjacent double bonds (pi bonds) perpendicular?



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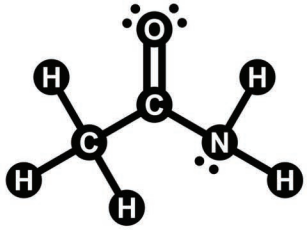
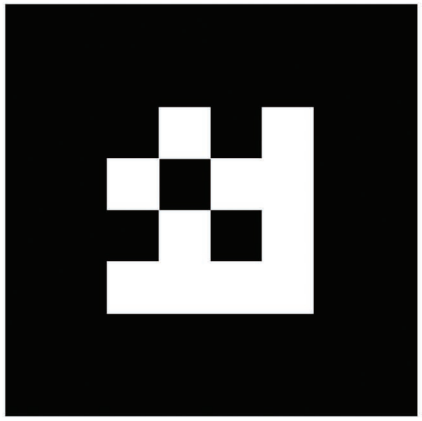



## $CH_3CONH_2$ Acetamide

Imagine acetamide, $CH_3CONH_2$, in three-dimensions. What are the hybridizations of the carbon and nitrogen atoms and what are the bond angles?



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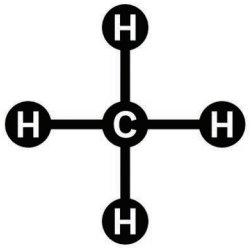
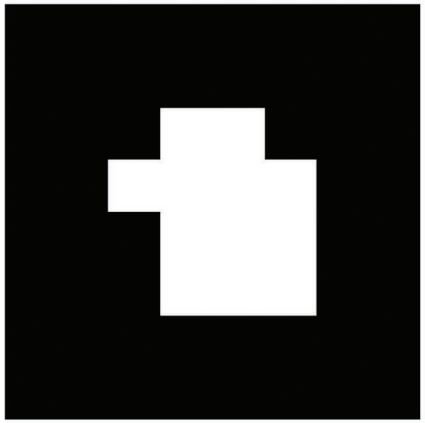



## $CH_4$ Methane

Imagine methane, $CH_4$, in three-dimensions. What is the hybridization of the carbon atom and what are the bond angles?



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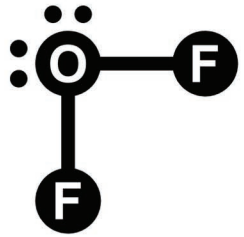
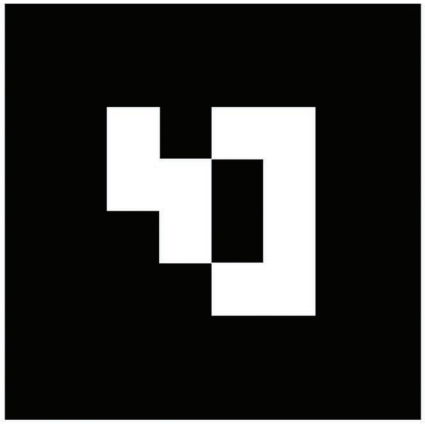
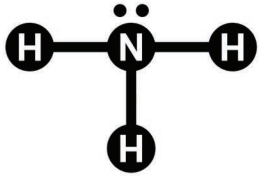



## $OF_2$ Oxygen Difluoride

Imagine oxygen difluoride, $OF_2$, in three-dimensions and indicate any deviations from ideal bond angles.

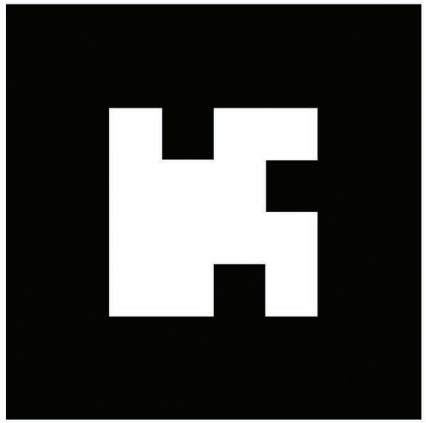







## $NH_3$ Ammonia

Imagine ammonia, $NH_3$, in three-dimensions. What is the hybridization of the nitrogen atom and what are the bond angles?





## $sp^3$, $sp^2$, and sp Hybridized Carbon

Imagine a $sp^3$, $sp^2$, and a sp hybridized carbon atom in 3-D. How many hybridized and unhybridized lobes does each have?