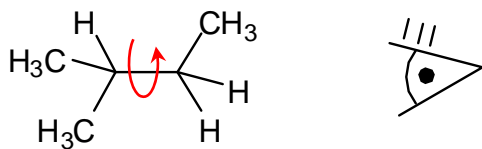


**In-Class Exercise:  
Newman Projections**

1. The center bond of 2-methylbutane (structure below) is free to rotate. As the bond completes a full ( $360^\circ$ ) rotation, the molecule passes through three staggered and three eclipsed conformations.



- a) Draw six Newman projections for the molecule above—one for each of the staggered and eclipsed conformations experienced by the molecule as the central bond rotates. Assume the perspective shown by the eyeball.

- b) Of these conformations, which is the most stable? Which is least stable?

2. What about 2-butanol? How would the answers to the questions above be different if one methyl group was replaced by an  $\text{-OH}$ ?

