DRAWING 3-D (Section 2.5)

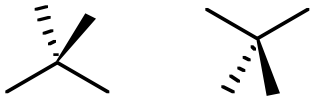
Guidelines for Drawing Models:

A. In-Plane/Out-of-Plane
- Designate an atom **in front** of plane with a **wedge**
- Designate an atom **behind** plane with a **hash**
- Designate an atom **in the plane** plane with a **straight line**

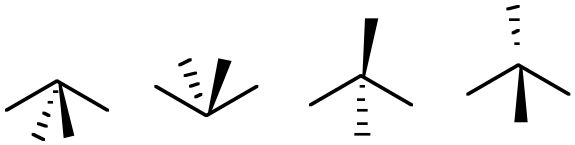
B. 3-D Perspective
1. Keep as many atoms as possible in a single plane (plane of the paper) by zig-zagging. Connections within the paper are drawn with straight lines.
2. Use wedges to indicate atoms that are in front of the plane.
3. Use hashes to indicate atoms behind the plane.

C. For any tetrahedral atom, only 2 attachments can be in the plane, 1 must be in front, and 1 behind.

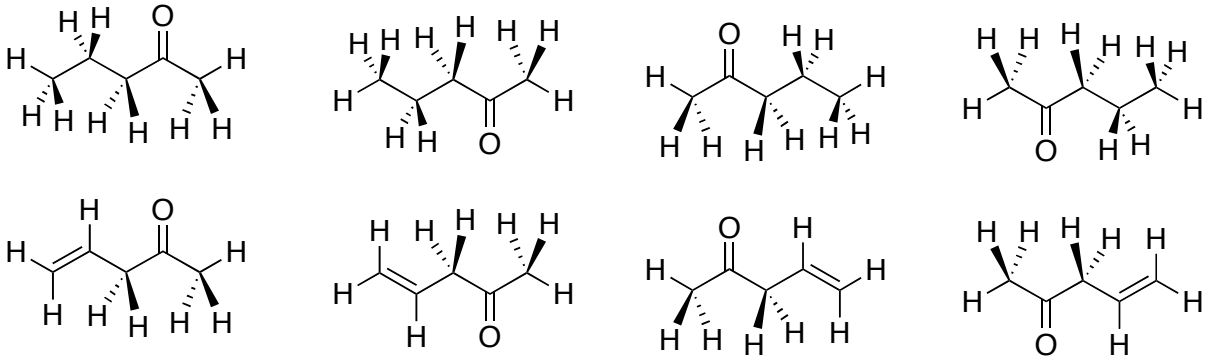
-if the two in the plane are "down", the hash/wedge should be up
-if the two in plane are "up", the hash/wedge should be down.
-the hash/wedge should never point in same direction as the in-plane lines, or else the atom doesn't looks tetrahedral
-for polyatomic molecules, it is strongly preferable to NOT have either of the in-plane atoms pointing straight up. Straight-up in-plane atoms do not lend themselves to extended 3-D structures.



Good! Look tetrahedral



Bad! These don't look tetrahedral!



Draw:

C_2H_6

C_4H_{10}

CH_3COCH_3

$CH_3CH{=}CHCl$