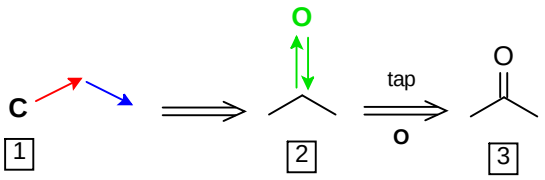
Sketch Tutorials

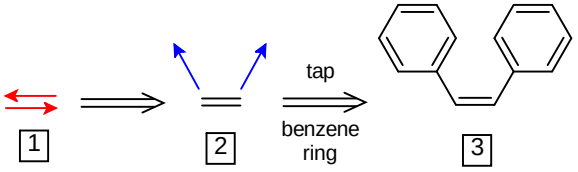


Methane (structure #1). ***Tap*** **C** and **double tap** the screen (#1). Hydrogens do not need to be drawn, as they are added automatically when the 2D drawing is converted into a 3D model.

Propane (structure #2). ***Draw*** the CC bond in #1 represented by the red arrow (***touch*** **C**, ***drag*** finger to create bond, and ***lift***). Next, ***draw*** the CC bond represented by the blue arrow. (Both bonds can also be drawn using a single ***draw-pause-draw*** operation).

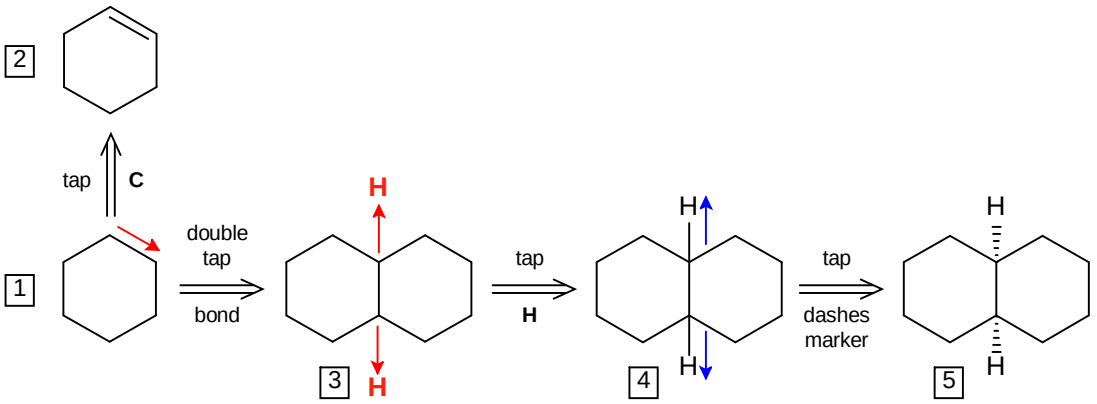
Acetone (structure #3). ***Tap*** **O**. ***Draw*** the CO double bond represented by green arrows in #2. Either ***draw*** one bond and then ***re-draw*** it, or ***draw*** both bonds using a single ***draw-pause-draw*** operation, that is, ***pause*** after the first bond has been drawn ***without lifting*** your finger from the screen and then ***drag*** back over the bond.

cis-Stilbene (structure #3)



Tap **C**. ***Draw*** a CC double bond as represented by the red arrows in #1. ***Tap***  and ***draw*** the bonds represented by the blue arrows in #2. ***Tap*** on  to “clean up” the drawing. If the “cleaned up” drawing is not satisfactory, immediately ***tap***  .

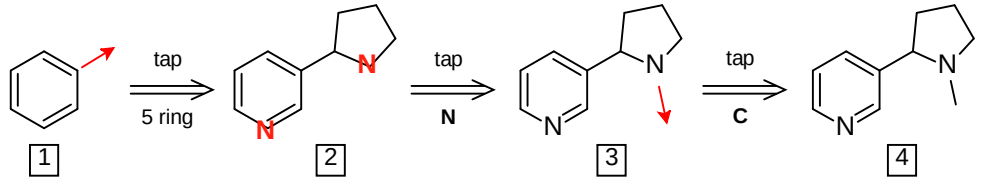
Cyclohexane (structure #1). ***Tap***  and ***double tap*** the screen.



Cyclohexene (structure #2). Start with structure #1. ***Tap*** **C** and ***re-draw*** the CC bond represented by the red arrow in drawing #1.

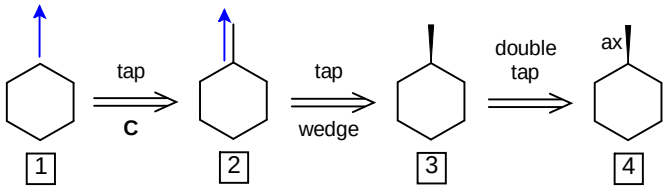
trans*-Decalin (structure #3).** Start with structure #1. ***Tap  . ***Double tap*** one bond in cyclohexane (#1) to fuse a second ring to the first (#3). While you have not specified that the two rings are to be *trans* fused, this is the default choice when this 2D drawing is converted into a 3D model.

cis*-Decalin (structure #5).** Start with structure #3. ***Tap **H** and ***draw*** the two CH bonds indicated by red arrows in #3. ***Tap***  and ***re-draw*** each CH bond as indicated by blue arrows in #4. ***Tap***  to give a more attractive sketch.



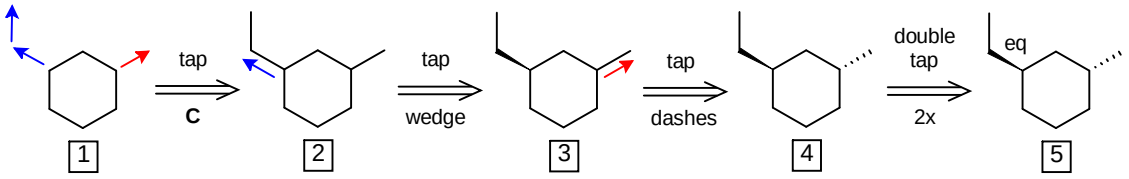
Nicotine. ***Tap***  and ***double tap*** the screen (#1). ***Tap***  , ***touch*** a benzene ring carbon and ***draw*** one bond to add the five-member ring (#2). ***Tap*** **N** and ***double tap*** the appropriate carbon in each ring (#3). ***Tap*** **C** and ***draw*** the NC bond indicated by the red arrow in #3.

axial-Methylcyclohexane (structure #4)



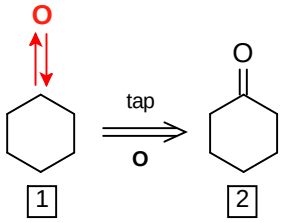
Tap and ***double tap*** the screen (#1). ***Tap*** **C** and ***draw*** the CC bond represented by the blue arrow in #1. ***Tap*** and ***re-draw*** this CC bond as indicated by the blue arrow in #2. ***Double tap*** the wedge bond. It will be labeled **ax** (if it is labeled **eq**, ***double tap*** the wedge again.)

trans-1,3-Ethylmethylcyclohexane (ethyl *equatorial*) (structure #5)



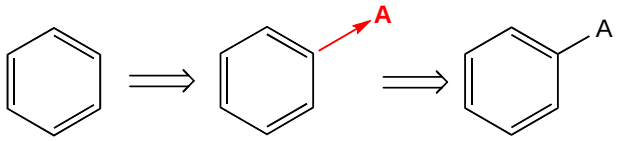
Tap and ***double tap*** the screen (#1). ***Tap*** **C**, ***touch*** one ring carbon and ***draw*** the CC bond represented by the red arrow in #1. Next, ***touch*** the appropriate ring carbon and ***draw*** both of the CC bonds represented by the blue arrows in #1 (use a single ***draw-pause-draw*** operation). ***Tap*** and ***re-draw*** the bond represented by the blue arrow in #2. ***Tap*** and ***re-draw*** the bond represented by the red arrow in #3. ***Double tap*** the wedge twice. The first time it will be labeled **ax**. The second operation replaces this label with **eq**.

Cyclohexanone (structure #2)



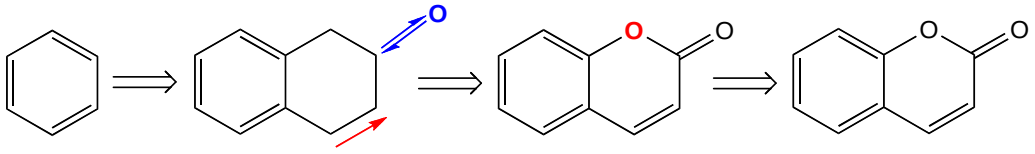
Tap and ***double tap*** the screen (#1). ***Tap*** **O** and ***draw*** a CO bond and then ***re-draw*** it as indicated by the red arrows in #1 (use a single ***draw-pause-draw*** operation).

Substituted Benzene Derivatives: Anisole (A = OCH_3), Nitrobenzene (A = NO_2)



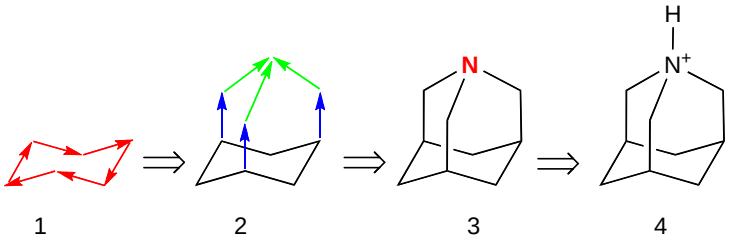
Tap  and ***double tap*** the screen (#1). Next, define a substituent and add it to the ring as shown in #2. ***Tap*** **Ele/Grp** (below **H**) to bring up the keyboard (if **Ele/Grp** has already been defined, ***double tap*** the icon). ***Type*** the appropriate symbol. (Methoxy or OCH_3 can be represented by **OMe** or **ome** or **OCH3** or **och3**. Nitro or NO_2 can be represented by **NO2** or **no2**.) ***Press*** **return**. ***Touch*** one ring carbon and draw a carbon-substituent bond. ***Tap*** on  to "clean up" the drawing. If the "cleaned up" drawing is not satisfactory, immediately ***tap***  .

Coumarin (structure #4)



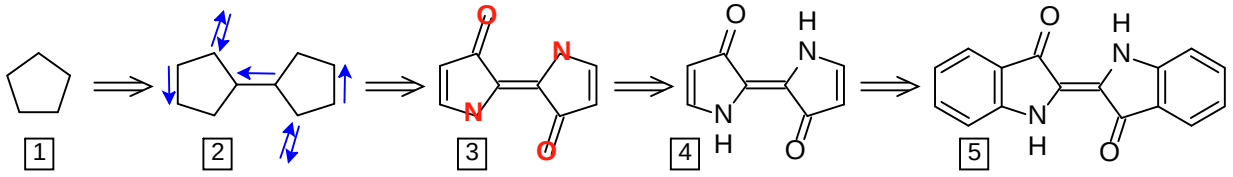
Tap  and ***double tap*** the screen (#1). ***Tap***  and ***double tap*** a benzene ring bond to fuse the rings together (#2). ***Tap*** **C** and ***re-draw*** the bond represented by the red arrow in #2. ***Tap*** **O**, ***touch*** the ring carbon indicated by the blue arrows in #2 and ***draw*** the bonds represented by these arrows (use a single ***draw-pause-draw*** operation to ***draw*** and ***re-draw*** this unit). Finally, ***double tap*** the benzylic carbon to replace it with oxygen (#4).

Protonated 1-Aza-adamantane (structure #4).



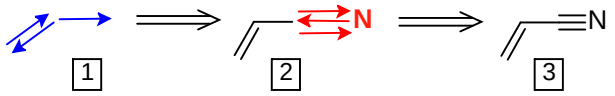
Tap* C** and ***draw the ring represented by the six arrows in #1 (use a single ***draw-pause-draw*** operation). Next, ***draw*** the three axial bonds represented by blue arrows in #2, then ***draw*** three more CC bonds (green arrows) connecting to a common site (#3). ***Tap* N** and ***double tap*** one bridgehead carbon to replace it by a nitrogen. ***Tap***  and ***double tap*** nitrogen. If  or  appears as the icon instead, ***tap*** the marker until  appears. ***iSpartan*** assumes that this means that nitrogen is to be protonated and will be replaced by NH^+ in the drawing.

Indigo (structure #5)



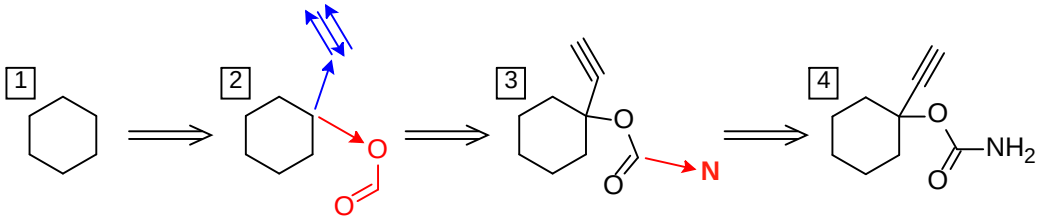
Tap  and ***double tap*** screen (#1). ***Touch*** a ring C and ***draw*** one bond to add a second ring (#2). ***Tap* C**. ***Re-draw*** the three CC bonds indicated by single arrows in #2. Next, ***draw*** the two CC double bonds represented by double arrows (use a single ***draw-pause-draw*** operation for each double bond). Add N and O to the drawing as indicated in #3. ***Tap*** the desired atom icon then ***double tap*** each carbon that needs to be replaced. ***Tap***  and ***double tap*** each *endocyclic* CC double bond in #4 to fuse two rings together (#5).

Acrylonitrile (structure #3)



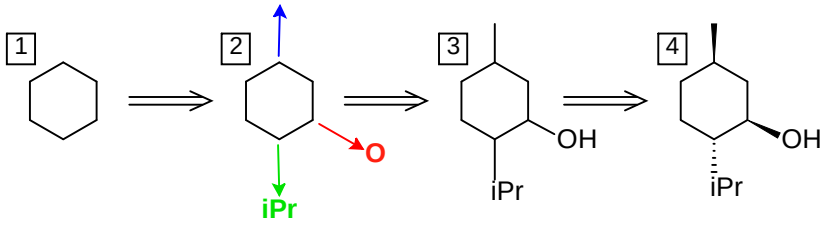
Tap* C** and ***draw all of the bonds represented by blue arrows in #1 using a single ***draw-pause-draw*** operation (begin by ***re-drawing*** one bond and then add a single bond). Next, ***tap* N** and add a CN triple bond to the methyl carbon. ***Tap*** the methyl carbon, ***draw*** and ***re-draw*** the CN bond represented by red arrows in #2 (use a single ***draw-pause-draw*** operation). ***Tap*** on  to "clean up" the drawing.

Ethinamate (structure #4)



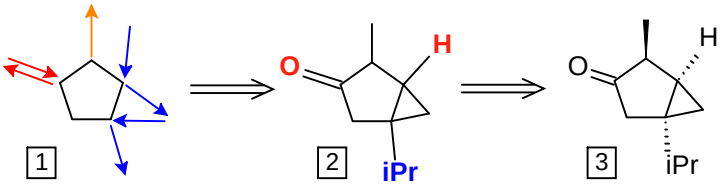
Tap  and ***double tap*** the screen (#1). Add an ethynyl group. ***Tap* C** and ***draw*** all of the bonds represented by blue arrows in #2. If you use a single ***draw-pause-draw*** operation to draw all of these bonds, you may find it easier to draw a "bent" ethynyl group. Add the carbamate group. ***Tap***  (if the arrow is pointed at carbon, ***tap*** the icon again to move the arrow to oxygen as shown) and ***draw*** the bond represented by the red arrow in #2. ***Tap*** N and ***draw*** the bond represented by the red arrow in #3. Tap on  to "clean up" the drawing. If the "cleaned up" drawing is not satisfactory, immediately ***tap***  .

Menthol (structure #4)



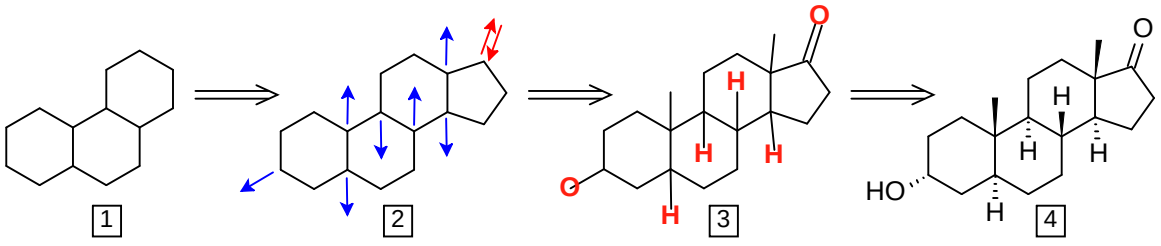
Tap  and ***double tap*** the screen (#1)**.** Add atoms and defined groups to this ring. ***Tap*** **C** and ***draw*** the bond represented by the blue arrow in #2. ***Tap*** **O** and ***draw*** the bond represented by the red arrow. Next, define an isopropyl group and add it to the drawing as shown in #2. ***Tap*** **Ele/Grp**, type **ipr** and ***press*** **return**, and ***draw*** the bond represented by the green arrow (#3). ***Tap***  or  as needed and ***re-draw*** all of the bonds in #4 that require stereochemical markers.

α-Thujone (structure #3)



Tap  and ***double tap*** the screen (#1). ***Tap*** **C** and ***draw*** all of the bonds represented by arrows in #1. Draw all of the blue arrows using a single ***draw-pause-draw*** operation. Do the same for the red arrows. Add O and H to the drawing as indicated in #2. ***Tap*** the desired atom icon then ***double tap*** each carbon that needs to be replaced. Next, define an isopropyl group and add it to the drawing as shown in #2. ***Tap*** the **Ele/Grp** icon (or ***double tap*** on whatever element of group is shown), ***type*** **ipr** and ***press*** **return**, then ***double tap*** the appropriate carbon atom (#3). ***Tap***  or  as needed and ***re-draw*** all of the bonds in #3 that require stereochemical markers.

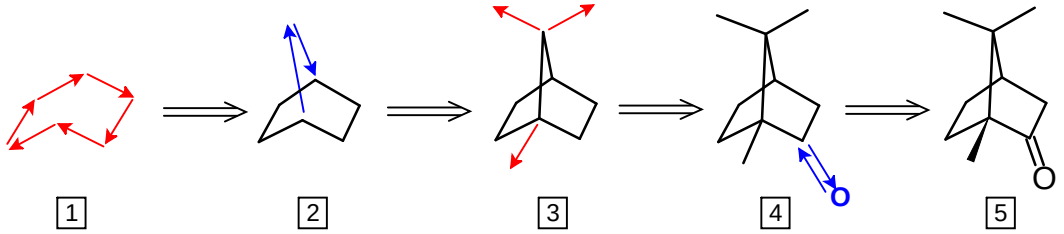
Androsterone (structure #4)



Tap  , ***double tap*** the screen, then ***double tap*** two ring bonds to fuse two additional rings (#1). ***Tap***  and ***double tap*** the appropriate ring bond to fuse this ring (#2). ***Tap*** **C** and draw all of the bonds represented by arrows in #2 (draw both red arrows using a single ***draw-pause-draw*** operation). Add O and H to the drawing as indicated in #3.

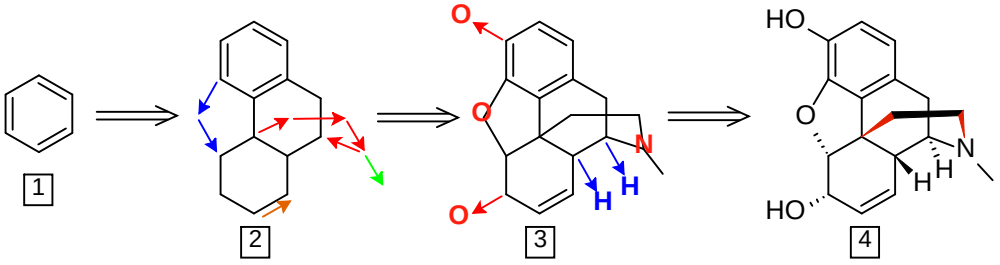
Tap the desired atom icon then ***double tap*** each carbon that needs to be replaced. ***Tap***  or  as needed and ***re-draw*** all of the bonds in #4 that require stereochemical markers.

Camphor (structure #5)



Tap **C** and ***draw*** the ring represented by the six arrows in #1 (use a single ***draw-pause-draw*** operation). Next, add a bridging carbon by ***drawing*** the two bonds represented by arrows in #2 (use a single ***draw-pause-draw*** operation). Next, ***draw*** three methyl groups as shown in #3, and then ***tap*** **O**, and use ***draw-pause-draw*** to introduce a CO double bond as indicated in #4. ***Tap***  and ***re-draw*** the bond to the bridgehead methyl group (#5).

Morphine (structure #4)



Tap  and ***double tap*** the screen (#1). ***Tap***  and ***double tap*** appropriate ring bonds to fuse two additional rings (#2). ***Tap*** **C**, then draw (or re-draw, as needed) all of the bonds represented by arrows in #2. Draw all of the red arrows using a single ***draw-pause-draw*** operation. Do the same for the two blue arrows. Add O, N, and H to the drawing as indicated in #3. ***Tap*** the desired atom icon then either ***double tap*** the carbons that need to be replaced or ***draw*** bonds where atoms need to be added. ***Tap***  or  as needed and ***re-draw*** all of the bonds in #4 that require stereochemical markers (draw the red wedges first and the CC bond connecting these wedges will be adjusted automatically).