ChemDraw Key Skills – Instructor Notes

* Session works best if students have access to a computer / laptop with ChemDraw installed.
* Work through the **ChemDraw Key Skills Exercises** document and live demonstrate to the students how to create the diagrams.

Key points to cover:

# General

* Installing ChemDraw (library website)
* New document
* Apply document settings
  + File, Apply document settings from, ACS document 1996
  + File, page setup, select landscape
  + File, Save style sheet, enter name
  + File, preferences, open/save, default style sheet
  + Multiple pages
* View toolbars, gridlines etc
* Character map window
* Show Shortcuts and Hotkeys summary sheet in Help tab

# Marquee Tool

* Hold alt to toggle to the lasso tool
* To select multiple objects hold shift whilst selecting molecules
* With a molecule selected, hold “ctrl” to rapidly make copies
* With a molecule selected, hold “shift” to move object horizontally or vertically
* The two operations above can be combined
* Clean-up compounds by selecting (or part) and ctrl+shift+k

# Arrows

* Double click on a reaction arrow to select all elements of the reaction
* Right click the arrowhead to bring up “arrow options”

# Text

* With text selected, press ctrl+f to convert to formula
* To replicate text label. Select text with text tool and press enter. Double click on another atom to introduce that label

# Bonds

* Bond length can be either fixed or variable. Switch between the two modes by pressing ctrl+L.
* By holding alt with single bond tool selected you can temporarily allow variable bond lengths
* Double bonds have three possible orientations. These can be changed by clicking on the centre of the bond.
* Join two bonds together by pressing ctrl+J

# Mechanisms and Cycles

* Best to use “pen tool” and nodes
* By hovering over the middle of an arrow you can bring up the “bend option”.
* Click and hold and bend as desired
* Selecting the end of the arrow, click and hold to shorten as required
* Use circle as template for cycles

# Rotating and Flipping

* Select molecule with marquee tool
* Rotate with middle top handle
* Press ctrl+shift+h to flip horizontal
* Press ctrl+shift+v to flip vertical
* To maintain the stereochemistry you can press ctrl+shift+alt+H (or “v”)

# Grouping, Aligning and Distributing

* View, Object toolbar
* You can group objects by selecting them with the marquee tool and pressing ctrl+g
* To ungroup you hold shift+ctrl+g
* Once objects are grouped you can align them using the object tool bar
* Objects can be distributed evenly using the distribute function (object toolbar, distribute, click horizontally or vertically)

# Perspective Tool

* Select molecule with marquee tool. Click and drag perspective tool an orientate as required

# Templates

* Show Templates available and how to use (e.g. chemical structures, biological drawings, glassware, etc)
* Possible to create your own templates (can be useful for project work where there is a need to draw many examples of similar structures)

# Copying to/from ChemDraw

* Paste structures into Word / PowerPoint with consistent sizing etc
* Copy from Drug Bank (InChI)