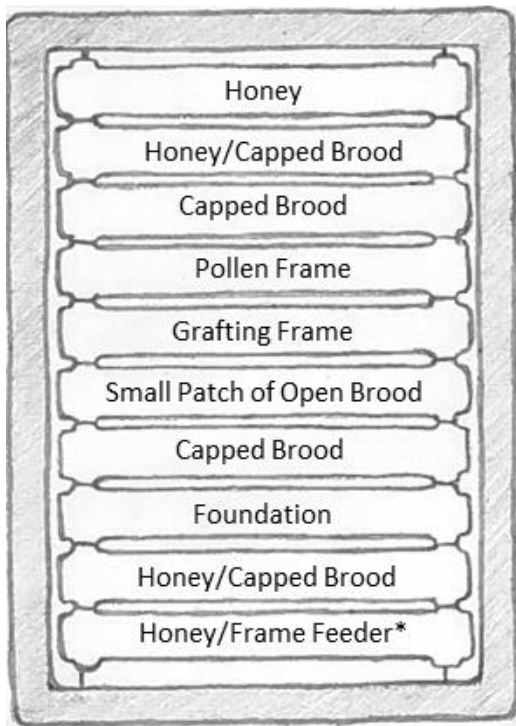




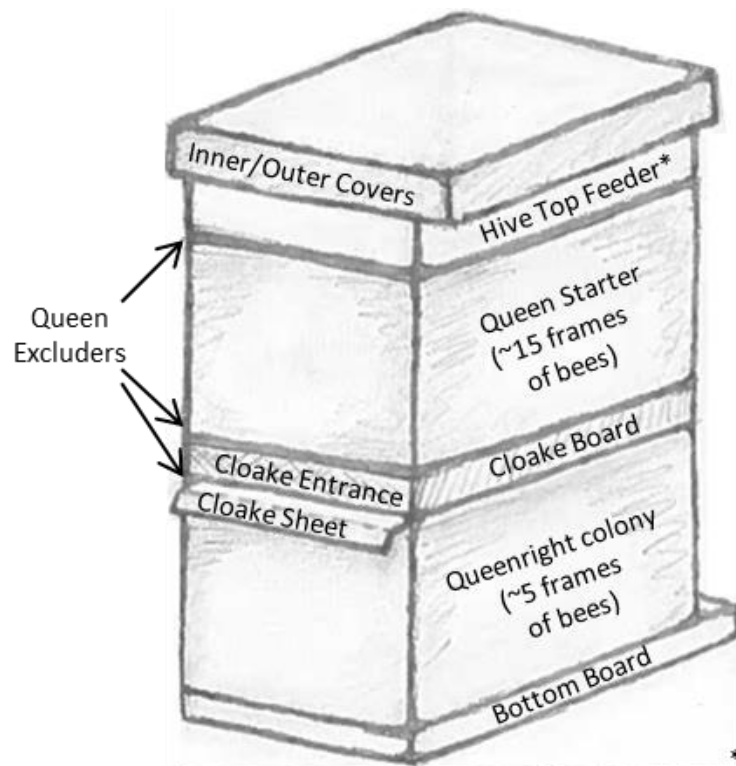
## Cell Builder Cheat Sheet

#	Step	Details	
1	<b>Remove Top Box</b>	Place top box onto the inner cover so shaken bees will be contained	
2	<b>Find queen</b>	Once found, make sure she is in a safe place: -Place her frame in a nuc box, or -Have somebody hold the frame - Place her in a cage ( <i>not recommended</i> )	
3	<b>Rotate entrance</b>	Rotate the bottom entrance 180° from the original entrance position <i>This is so forager bees will return into the top box, thereby furthering the cell building potential</i>	
4	<b>Remove frames</b>	Remove all frames from the bottom box and set against the top box	
5	<b>Replace queen frame</b>	Place the queen frame back into the <b>bottom box</b> , destroying any queen cells on the frame	
6	<b>4 shakes of bees</b>	Shake four frames of bees into the bottom box, so there is a total of 5 frames of bees <i>(4 shakes + queen frame)</i>	
7	<b>Cover bottom box</b>	Temporarily cover the bottom box while working on top box - use something like burlap or upside down cover ( <i>so no entrance</i> )	
8	<b>Shake remaining frames into top box</b>	-Including the remaining frames from the bottom box - Remove <b>all</b> queen cups/cells from frames and set aside - <b>At least</b> 15 frames of bees are needed in the top box ( <i>more can be harvested from other hives if needed</i> )	
9	<b>Sort frames</b> (see Figure 1)	<b>Top</b>	- Frame of pollen ( <i>next to graft frame</i> ) - Frame with a <b>small</b> amount of open brood ( <i>next to graft frame</i> ) - Frame of Foundation - Frames of capped brood - Frames of food - Frame feeder ( <i>if needed</i> ) - Leave space in centre for grafting frame
		<b>Bottom</b>	-Any frames with open brood or eggs -Some food frames -Some drawn comb with room to lay -Any remaining frames
10	<b>Reassemble hive</b> (see Figure 1)	Reassemble hive in this order: A. Bottom board ( <i>entrance 180° from original position</i> ) B. Bottom box C. Queen excluder #1 D. Cloake board ( <i>with metal sheet in place</i> ) E. Queen excluder #2 F. Top box G. Place graft frame in position H. Queen excluder #3 I. Pollen patty J. Hive top feeder ( <i>if not using frame feeder</i> ) K. Inner and outer covers  A frame or hive top feeder is recommended	

Procedure modified from University of Guelph Bee Research Centre.



Top Box Assembly



\*Optional

Hive Assembly

Figure 1. Grafting Cell Builder Assembly

**Notes:**

- A cell builder will require a double deep or two singles *full* of bees. At least 18 frames of bees at a minimum, 20 is better. Both colonies should be on the verge of swarming- not just any hive will do.
- For best results, cell builder should be made up 24 hours prior to grafting.
- MANY* nurse bees are needed to provision/build queen cells.
- Cells must be removed before hatching so the young queens don't kill one another
- Maximum of 50 queen cells per cell builder, although two grafting frames can be in the same cell builder if one of the frames has all capped queen cells.
- Cell builders should be fed sugar syrup. The amount of syrup fed is dictated by the honey flow.
- Using this method, the same cell builder can be used each week. Grafting can be done once every 7 days but harvesting cells is done after 10 days
- If re-using the cell builder, some frames of food may need to be replaced with empty drawn comb to give the queen room to lay.