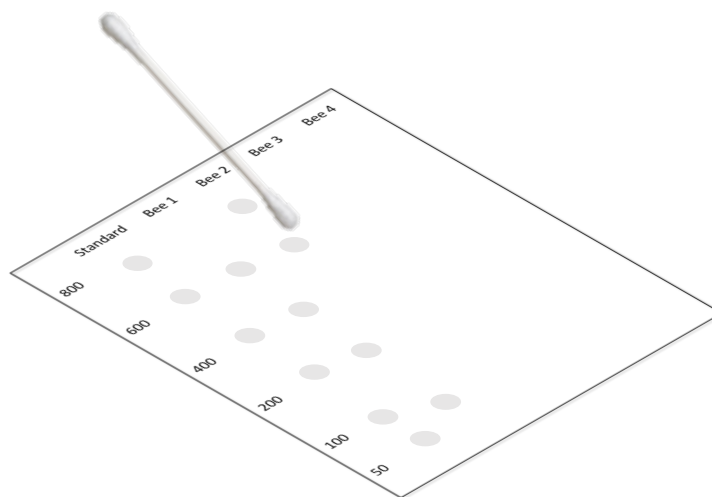


# Gel Electrophoresis Instructions and Template

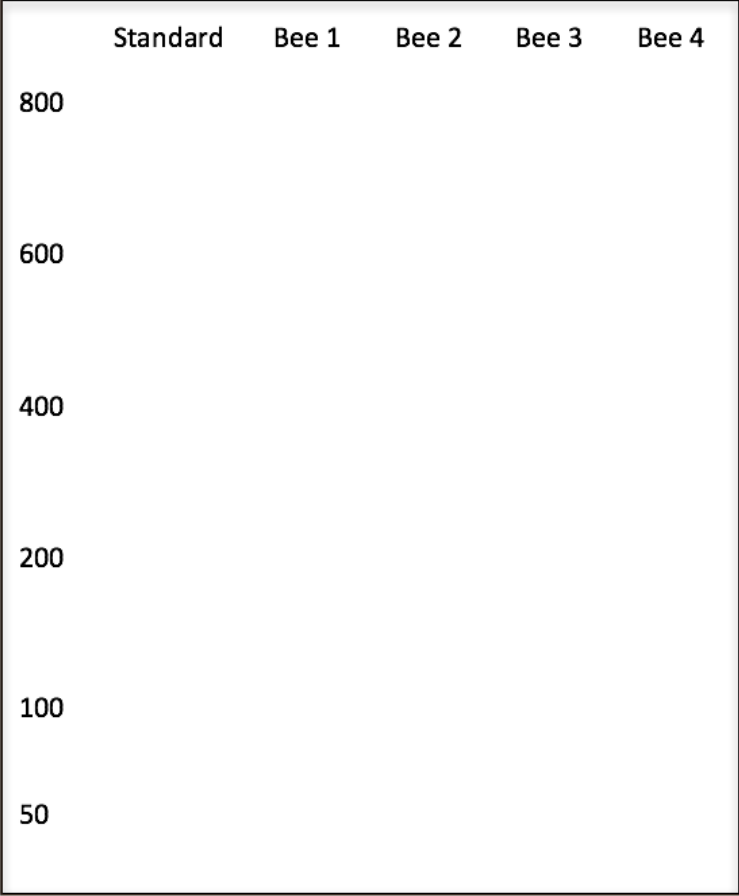
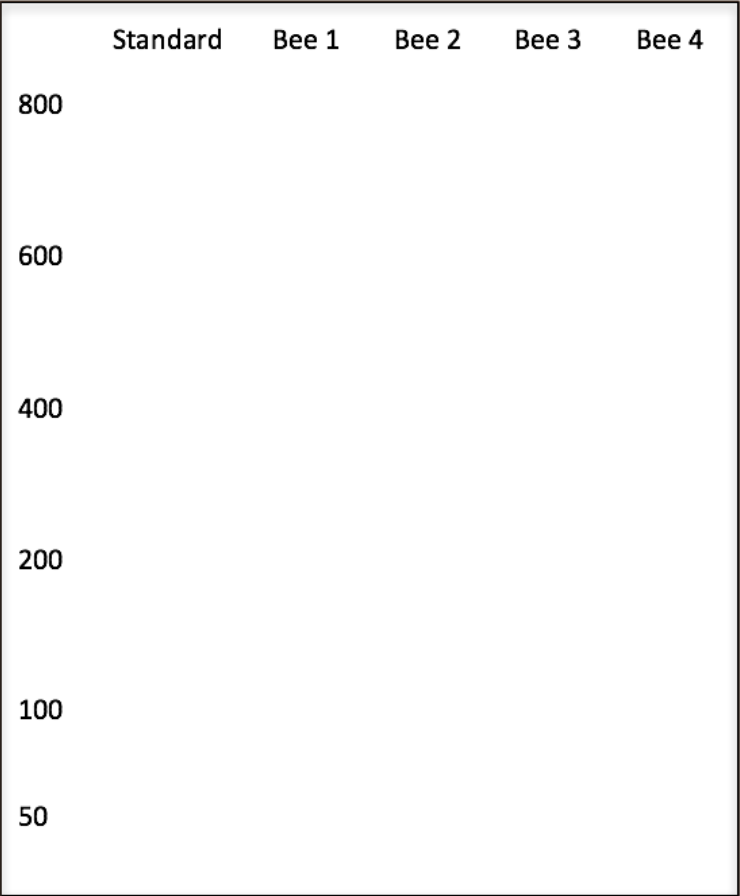
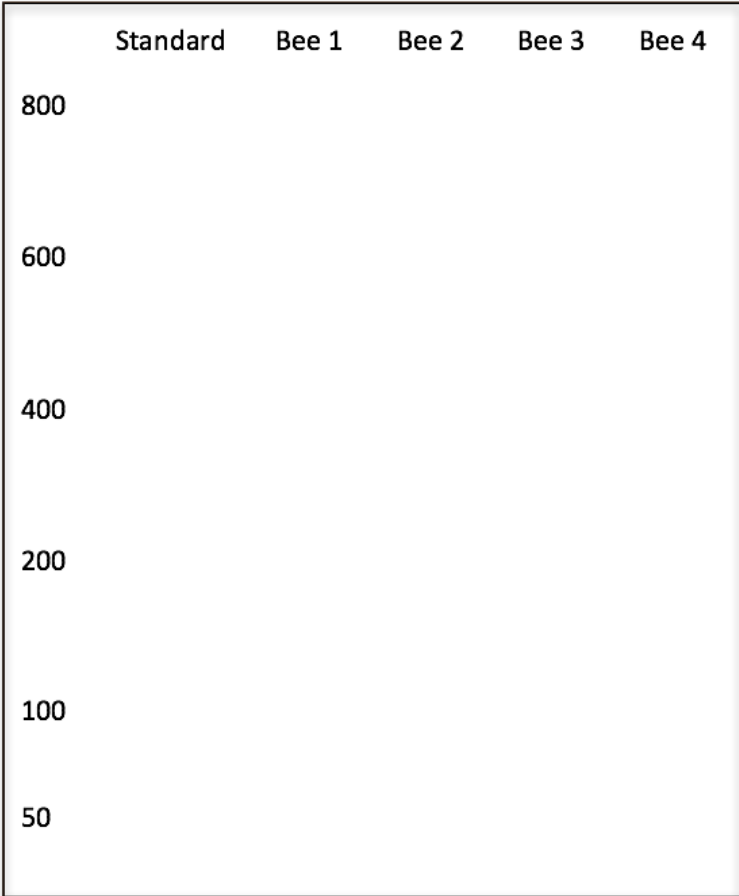
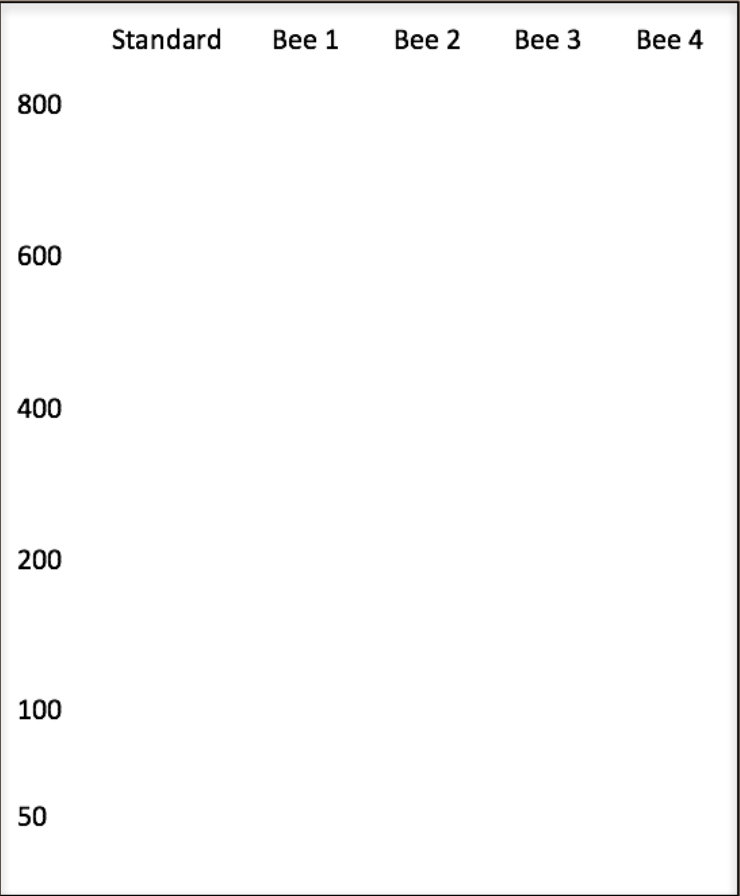
## To make the “gel electrophoresis” cards:

1. Photocopy the “gel electrophoresis” card template onto card stock\*\*. The gel electrophoresis template has 4 cards per page; cut along the dotted lines to separate the cards.  
\*\*Note: We suggest using card stock as copy paper will not stand up well to the washing soda solution.
2. Apply phenolphthalein to a Q-tip or the eraser end of a pencil. Place dots of phenolphthalein in the correct places on the gel electrophoresis cards. See sample below where “x” indicates where to place a dot of phenolphthalein.
3. After application, the phenolphthalein will dry as a transparent dot on the card. Place in a plastic bag until ready to use.

	Standard	Bee 1	Bee 2	Bee 3	Bee 4
800	x		x		x
600	x	x	x	x	x
400	x	x		x	
200	x	x		x	
100	x			x	
50	x	x		x	



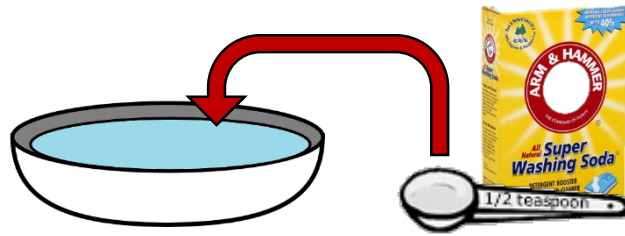
Note: Students may be concerned that the placement of the DNA pieces do not exactly match each other as they would other types of DNA activities such as identifying DNA from a crime scene. In this type of analysis, researchers are looking for the number of pieces of DNA that result from the enzyme activity and not the size/placement of the DNA.



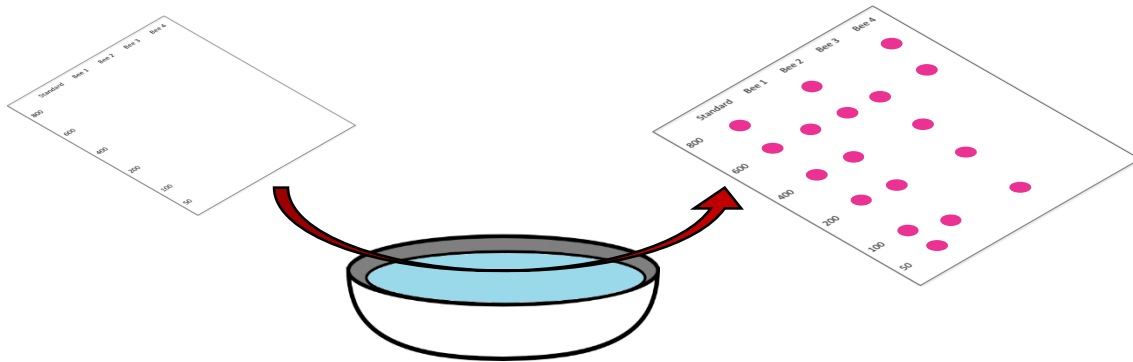
## Gel electrophoresis lab procedures:

Each group will need 1 bowl, water, 0.5 teaspoon of washing soda, a spoon, and 1 gel electrophoresis card.

1. Fill bowl approximately  $\frac{1}{2}$  full with water, add  $\frac{1}{2}$  tsp of washing soda solution. Mix with spoon.



2. Dip card into solution until pink dots become visible and quickly remove it.



3. Record location of "DNA bands" on student worksheet.