Behavior Group
Worksheet A: Experiment Design

Group Members: (name of each person)

Experimental Technique: Assess climbing behavior and temperature sensitivity of adult flies
Control data: Climbing behavior and temp sens. of wildtype.

Choose ONE transgenic flies that knocks down one of the other two calcium channel genes:
Elav-Gal4; UAS-Cav1-RNAi
Elav-Gal4; UAS-Cav3-RNAi

<table>
<thead>
<tr>
<th>Calcium channel gene family</th>
<th>Cav1</th>
<th>Cav2</th>
<th>Cav3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternate Name</td>
<td>Dmca1D</td>
<td>Dmca1A, cac</td>
<td>Dmcaα1G, α1T</td>
</tr>
</tbody>
</table>

1. Background: Provide additional information about the transgenic model that you selected for the experiment. Use resources including mentors, books, internet (possible search terms: UAS-Gal4 systems, RNAi, Cav3 insect, Dmca1D or Cav1 Drosophila)

2. Provide a definition of a scientific hypothesis:

3. State the hypothesis you would like to test (make sure it conforms to your definition):
We hypothesize that:

4. One sentence that states how you will test this:
To test this hypothesis we will:

5. Experimental Design: Outline of the experiment (keep it simple) and data you plan to collect

6. Prediction: What do you expect to see and why?
7. Briefly describe your results: Include results from control and experimental manipulation.

8. Conclusions: Did your data support or refute your hypothesis? What do you think this means? Based on the outcome, Revise or formulate a new hypothesis that you would like to test.

9. Prepare 20 min Presentation: Cover sections 1-8 with the goal of informing the whole group about your exciting new discovery.