Supplemental Table 5.

| Genotype                        | Mean ± SEM     | t-Ratio | p         |
|---------------------------------|----------------|---------|-----------|
| **Figure 5B.**                  |                |         |           |
| ANOVA $F_{(4,52)}$ = 7.3803, $p<0.0001$ |                |         |           |
| $w^{1118}$>ONSTA                 | 78.322 ± 1.593 |         |           |
| Elav;Ras2>ON4R$^{II}$           | 58.149 ± 3.314 | 24.81   | 8.5x10$^{-6}$ |
| Elav;Ras2>S238A                 | 61.783 ± 2.509 | 15.92   | 2.2x10$^{-4}$ |
| Elav;Ras2>T245A                 | 62.857 ± 3.076 | 14.58   | 3.8x10$^{-4}$ |
| Elav;Ras2>ONSTA                 | 61.820 ± 3.130 | 16.60   | 1.7x10$^{-4}$ |
| Elav;Ras2>ON4R$^{II}$           | 58.149 ± 3.314 |         |           |
| Elav;Ras2>S238A                 | 61.783 ± 2.509 | 0.80    | 0.373     |
| Elav;Ras2>T245A                 | 62.857 ± 3.076 | 1.41    | 0.239     |
| Elav;Ras2>ONSTA                 | 61.820 ± 3.130 | 0.86    | 0.357     |
| Elav;Ras2>S238A                 | 61.783 ± 2.509 |         |           |
| Elav;Ras2>T245A                 | 62.857 ± 3.076 | 0.07    | 0.792     |
| Elav;Ras2>ONSTA                 | 61.820 ± 3.130 | 0.00    | 0.992     |
| Elav;Ras2>T245A                 | 62.857 ± 3.076 |         |           |
| Elav;Ras2>ONSTA                 | 61.820 ± 3.130 | 0.06    | 0.794     |
| **Figure 5C.**                  |                |         |           |
| ANOVA $F_{(3,39)}$ = 38.5284, $p<0.0001$ |                |         |           |
| $w^{1118}$>S238A                | 77.327 ± 1.141 |         |           |
| Elav;Ras2>w$^{1118}$            | 75.407 ± 1.949 | 0.56    | 0.456     |
| Elav;Ras2>S238A                 | 55.275 ± 2.028 | 65.63   | 1.2x10$^{-9}$ |
| Elav;Ras2>S238E                 | 60.028 ± 1.665 | 40.13   | 2.5x10$^{-7}$ |
| Elav;Ras2>w$^{1118}$            | 75.407 ± 1.949 |         |           |
| Elav;Ras2>S238A                 | 55.275 ± 2.028 | 74.6    | 2.7x10$^{-10}$ |
| Elav;Ras2>S238E                 | 60.028 ± 1.665 | 48.0    | 4.1x10$^{-8}$ |
| Elav;Ras2>S238A                 | 55.275 ± 2.028 |         |           |
| Elav;Ras2>S238E                 | 60.028 ± 1.665 | 3.83    | 0.058     |
| **Figure 5D.**                  |                |         |           |
| ANOVA $F_{(3,43)}$ = 15.3415, $p<0.0001$ |                |         |           |
| $w^{1118}$>T245A                | 78.126 ± 1.762 |         |           |
| Elav;Ras2>w$^{1118}$            | 78.049 ± 1.564 | 0.00    | 0.978     |
| Elav;Ras2>T245A                 | 62.098 ± 2.545 | 31.74   | 1.5x10$^{-6}$ |
| Elav;Ras2>T245E                 | 74.956 ± 1.734 | 1.14    | 0.29      |
| Elav;Ras2>w$^{1118}$            | 78.049 ± 1.564 |         |           |
| Elav;Ras2>T245A                 | 62.098 ± 2.545 | 33.72   | 8.8x10$^{-7}$ |
| Elav;Ras2>T245E                 | 74.956 ± 1.734 | 1.26    | 0.267     |
| Elav;Ras2>T245A                 | 62.098 ± 2.545 |         |           |
| Elav;Ras2>T245E                 | 74.956 ± 1.734 | 21.7    | 3.5x10$^{-5}$ |
**Supplemental Table 5.**

| Figure 5E. | ANOVA $F_{(3,33)} = 2.7719$, $p=0.0586$ |
|------------|------------------------------------------|
| $w^{1118}\Rightarrow S262A$ | 74.279 ± 2.556 |
| Elav;Ras2>$w^{1118}$ | 78.280 ± 2.655 | 0.99 | 0.326 |
| Elav;Ras2>S262A | 69.640 ± 2.863 | 4.63 | 0.039 |
| Elav;Ras2>S262E | 68.073 ± 3.149 | 6.87 | 0.013 |
| Elav;Ras2>$w^{1118}$ | 78.280 ± 2.655 |
| Elav;Ras2>S262A | 69.640 ± 2.863 | 1.26 | 0.270 |
| Elav;Ras2>S262E | 68.073 ± 3.149 | 2.39 | 0.132 |
| Elav;Ras2>S262A | 69.640 ± 2.863 |
| Elav;Ras2>S262E | 68.073 ± 3.149 | 0.15 | 0.698 |

**Supplemental Table 5. Statistical details from Fig 5**

The means and SEMs for learning performance of the indicated genotypes are shown for $n > 9$. Following the indicated significant ANOVA the means we compared using the indicated planned multiple comparisons.