

## Pollinators in Peril

*Why are species disappearing? How can we save species and ourselves? How can we use science to better our world?*



### Project Description:

Bees are a main pollinator for flowering plants in many ecosystems. They are responsible for pollinating much of the food that we eat and many of the plants important to maintaining healthy ecosystems. Recently, there has been a significant decline in the number of honey bees and many species of native bees. One of the factors that has caused bees to die is predators. Yet little is known about how predators capture bees, or how bees avoid predators. You will design experiments to test bees' reactions to predators. This important research will be used by scientists, such as Dr. Eben Goodale and Dr. James Nieh, to better understand bees and their decline. You can help reverse bee colony collapse.

### Project Deliverables:

- Scientific paper that summarizes your experiment and results
- PowerPoint presentation to the UCSD Nieh Lab scientists summarizing your experiment and results

### National Science Standards Addressed:

- **6.1 Inquiry Standards:** Students understand scientific inquiry and demonstrate skills necessary to do scientific inquiry
- **6.3 Life Science Standards:** Students understand the interdependence of organisms and the behavior of organisms
- **6.6 Science in Personal and Social Perspectives Standards:** Students understand environmental quality and natural and human induced hazards

## Project Benchmarks:

Date	Activity
9/1	TED Talk Clip: Dennis vanEngelsdorp's "A Plea for Bees" Guest lecture by Dr. Eben Goodale, <i>The Importance of Pollinators and Predators</i>
9/6	Draft of introduction to paper due
9/7	Biodiversity and Bees reading due
9/8	Field trip to UCSD Nieh Bee Lab and Bee Hives to observe bees in hive, training of bees, and mock experiment
9/9	Observations at Hives due
9/12	Field trip to Skeleton Canyon to collect and identify bee predators with entomologists, Jim Berrian and James Hung
9/13	Predator Identification due
9/16	Lesson on the process of science and brainstorm of experimental design
9/19	Lesson on writing a methods section and first draft of methods section due
<b>10/6 &amp; 10/11</b>	<b>Experiments at the Hives at UCSD</b>
10/12	Revision of introduction and method due
10/13	Lesson on revising scientific paper. Third draft of introduction and method due
10/20	Guest lesson by Dr. Eben Goodale, <i>Statistical Analysis of Bee Response to Predators</i> First draft of results and conclusion due.
10/31	Abstract and literature cited due
<b>11/2</b>	<b>First draft of paper due; PowerPoint due</b>
11/9	Second draft of paper due
11/10	<b>Presentation to scientists</b> of the Nieh Lab at UCSD
11/14	Third draft of paper due
<b>11/29</b>	<b>Final paper due</b>
12/1-12/7	Exhibition preparation
12/7	<b>Exhibition</b> at OB Farmer's Market 3-7pm
12/15	<b>Exhibition</b> at HTH 6-8pm