

# Dragonflies & Damselflies (Order Odonata)

## Crossword Puzzle Information

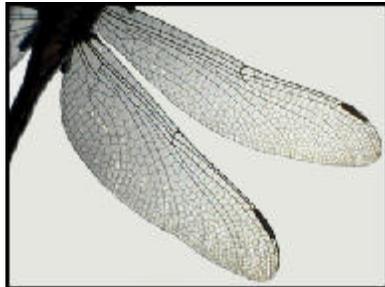
### DESCRIPTION



Compound eyes of dragonflies and damselflies may cover most of the head. (Photo by: Eddie Dunbar)

### IDENTIFICATION

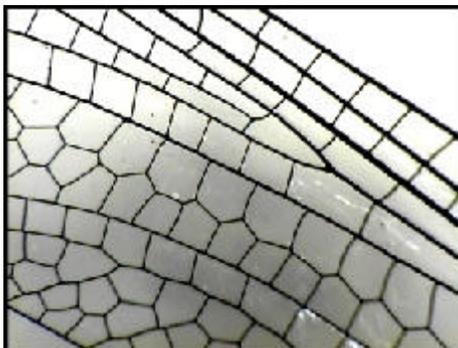
**ADULTS** - Odonata (the odonates) has two suborder



Adult odonates have two pairs of membranous wings. (Photo by: Eddie Dunbar)

s: Anisoptera (dragonflies) and Zygoptera (damselflies). In Oakland and the rest of the San Francisco Bay Area, the Zygoptera are encountered more commonly. The Zygoptera are bluish or grey, dainty, very slender and about 1-1/2 inches long.

The Anisoptera are larger, and more robust. Those we encounter most commonly are black and yellow or bright reddish orange. Wings in both odonate groups are two-paired, elongate, membranous, and many-veined. In the Anisoptera, the wings are held outstretched on the sides of the body. In the Zygoptera, the wings are held together, above body. Odonate abdomens are long and slender.



Wings are many-veined. (Photo by: Eddie Dunbar)

Compound eyes are very large, often

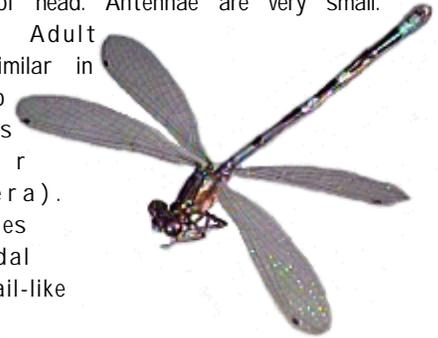
occupying most of head. Antennae are very small.

Similar taxa: Adult odonates are similar in appearance to adult mayflies

(Order Ephemeroptera). However, odonates lack the caudal appendages (tail-like structures) of the Ephemeroptera.

Immatures of both Damselflies are more commonly encountered in the orders are similar SF Bay area. (Photo by: Eddie Dunbar, CityBugs) in appearance.

However, naiads (nymphal dragonflies) possess a prehensile labium (labium=lip) adapted for seizing prey - thus the order name, "Odonata - meaning "toothed".



### BIOLOGY

All forms are predaceous on insects. Adults

catch insects on the wing. Naiads are aquatic and hunt underwater. Adults lay eggs in the water or within aquatic plants. Adults are accomplished fliers.



### IMPORTANCE

In both the adult and nymphal stages, odonates are important predators. A single adult dragonfly may eat 300-400 gnats each day. Nymphs feed on mosquito larvae and other aquatic fauna. Dragonflies do not sting - contrary to popular belief.

### BIBLIOGRAPHY

[A Field Guide to the Insects of America North of Mexico](#). Borror, Donald J. and Richard E. White. Houghton Mifflin Co. Boston, MA. 1970.

[California Insects](#). Powell, Jerry A. and Charles Hogue. University of California, Berkeley. 1979.

[Introduction to Insect Biology and Diversity](#). Daly, Howell V., John T. Doyen, and Alexander H. Purcell, III. Second Edition. Oxford University Press. New York, NY. 1998.

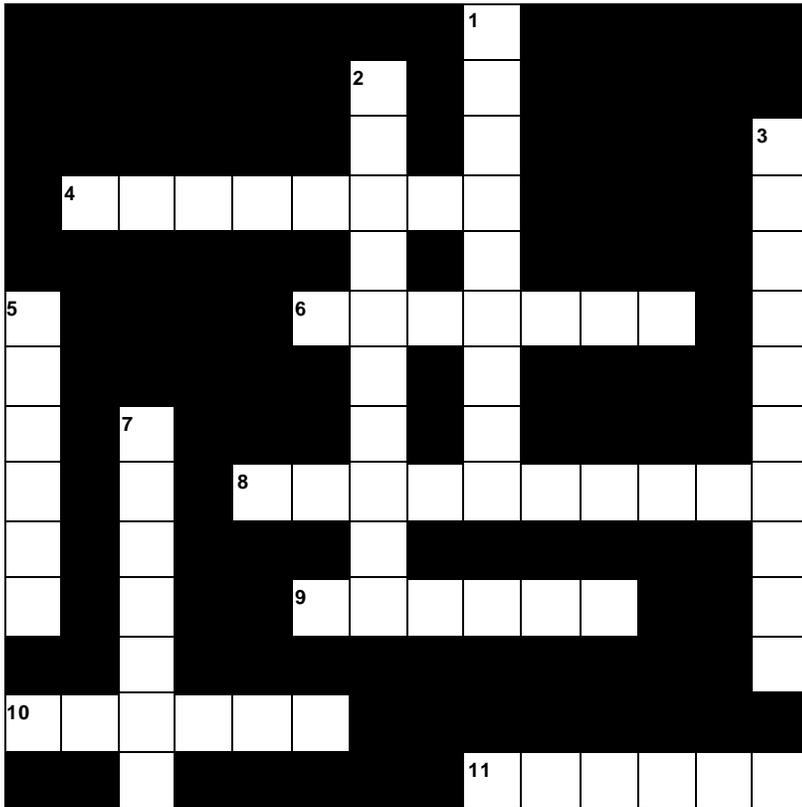


Copyright © 2000 Quality Nature Displays  
All Rights Reserved.

[ Find out how to complete this crossword puzzle online at  
[www.bugpeople.org/curriculum/curriculum.htm](http://www.bugpeople.org/curriculum/curriculum.htm) ]

# Dragonflies & Damselflies (Order Odonata)

## Crossword Puzzle



### Down

- 1 Odonate subfamily comprised of damselflies.
- 2 Odonate subfamily comprised of dragonflies.
- 3 Describes the grasping mouthpart of odonate nymphs that is adapted for seizing prey.
- 5 Means "lip".
- 7 Means underwater lifestyle. (Odonate immatures are \_\_\_\_\_ and hunt underwater.)

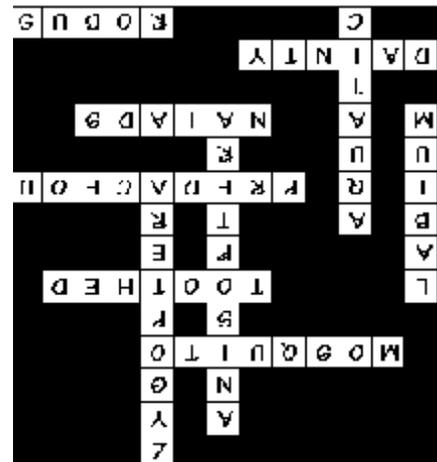
### Across

- 4 Odonate immatures are important because they eat \_\_\_\_\_ larvae.
- 6 What "Odonata" means.
- 8 "All forms are \_\_\_\_\_ on insects."
- 9 Nymphal odonate.
- 10 Frail in appearance or behavior.
- 11 Strong or stout in appearance or behavior.



**Author**  
**Eddie Dunbar**  
 - 95 Common Insects  
 - 90 Color Photographs  
 - Written especially for  
 Oakland Teachers  
 of Science  
[www.bugpeople.org](http://www.bugpeople.org)  
 (510) 506-2837

## Solution



Copyright © 2000 BugPeople.org.  
 Photographs by Eddie Dunbar.  
 All Rights Reserved.

[ Find out how to complete the Dragonflies & Damselflies  
 Crossword Puzzle online at  
[www.bugpeople.org/curriculum/curriculum.htm](http://www.bugpeople.org/curriculum/curriculum.htm) ]

# Dragonfly & Damselfly Crossword Puzzle Curriculum Matrix

	CONCEPT	PROCESS / PERFORMANCE
K	Living things can be described and distinguished from each other.	Students will observe, compare, and describe animals.
1	Living things have basic needs that must be met in order to sustain life.	Students begin to observe a variety of ways that living things have their needs met.
2	Life cycles include birth, growth, reproduction, and death.	Students observe, describe, and record changes in an organism's development.
3	Living things have systems to sustain life such as the skeletal, circulatory, and respiratory systems.	Students will understand that an animal has systems that sustain life.
4	The behavior of living things is related to their environment.	Students will observe, record, and describe interactions of living things with other living things.
5	Living things depend on their environment.	Students will observe and describe the habitats of living organisms.

*Adapted from OUSD K-5 Standards*

*March 22, 2000*