

## Dragonfly wings

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Dragonflies belong to the order Odonata and are known to be one of the most ancient insects living on the planet. The meaning of the term “Odon” is “tooth”. The dragonflies are aerial predators, grab the prey with their basket type feet/ legs. Post catching, they tear off the wings of their prey with the help of their sharp mandibles. It is believed that the first dragonfly had existed somewhere around 300 million years ago. In fact, the largest insect recorded on this planet *Meganeuropsis permiana*, the extinct ancestor of present-day dragonflies had a wingspan of around three feet. This mighty creature was known to have existed prior to the reign of the dinosaurs. Approximately 6337 species of dragonflies exist worldwide. Their habitats range from wetlands to bogs. Dragonflies are often considered as apex predators in the world of insects. They are known to have nearly 98% success rate as a hunter.

The wings of these insects are outgrowths of exoskeleton which helps them in flight. The wings are located at the mesothorax and the metathorax (second and third

thoracic segments). The four wings are mostly referred to as the hindwings and the forewings. Dragonflies have their flight muscles attached to their wings. Unlike other insects dragonflies are known to spread out their wings while resting. Dragonflies have two pair of wings and each of them work independently, allowing them to alter the angle of individual wings and increase their agility during flight. Apart from being agile some species are known to reach a speed of almost 18 miles/ hour.

Dragonflies are known to be expert fliers, their wings are known for stability and can bear high load during flapping, hovering and gliding. The wings are primarily composed of veins and membranes. The membranes, a Nano composite material and veins make the wings extremely versatile thus making dragonflies a maneuverable flier. The structure of the wings, specifically the corrugation is known to intensify their aerodynamic skills. They are among the rare species who are known to mate in mid air. Infact their inability to fly becomes a reason for them to starve to death. They are known to hunt preys only during flight. Dragonflies



