

## FLEAS

**This page is used in conjunction with the DVD,  
the flea slide, the flea question sheet, the flea anatomy diagram and the flea lab.**

Have you even been bitten by a flea? Although this tiny wingless insect is bothersome, it is also quite interesting.

The flea is a parasite and lives exclusively on the blood of animals. There are many types of fleas. Some are very particular about who their host is, but most will drink blood from a variety of animals. There are mouse fleas, rat fleas, cat fleas, dog fleas, human fleas, bird fleas and even bat fleas!

Scientists, using a microscope, can identify a particular flea by looking at its spines and bristles, head shape, length of mouth parts, and presence or absence of eyes. Bat fleas have no eyes.

All fleas have a special mouth which looks like a long siphon tube. Because of this, scientists classify the flea in the order called *Siphonaptera*. When a flea finds a potential meal, it digs its claws in to hold on and plunges its siphon-like mouth into the skin. While drinking blood, the flea injects some of its saliva. This saliva contains a chemical to keep the blood from clotting and often irritates the skin and causes itching. Although a single flea will fill itself on less than a drop of blood, many fleas on a small animal can consume enough blood to cause anemia.

The flea undergoes metamorphosis from egg to larva to pupa to adult. A female flea may lay 300-500 eggs at one time. The eggs look like ping-pong balls and are very tiny (about one-half mm long). They take about 2-14 days to hatch, depending on temperature and humidity. The larva is grub-like and grayish in color and is about 2-6 mm long. It has no eyes or legs and moves about with a rolling motion. The larva also has chewing mouth parts and eats hair, skin, and droppings (undigested blood) from adult fleas. It may exist in this stage from 15-200 days before it spins a U-shaped cocoon about itself, just like a butterfly does. Within its cocoon, the flea (now in the pupa stage) can remain alive for as long as a year, but usually the flea emerges from the cocoon after about two weeks. When the flea emerges, it is very hungry and immediately begins to search for a meal. A hungry human flea may also settle on a pig for a meal and the cat flea, *Ctenocephalides felis*, will readily bite a human.

Fleas are strong and have the ability to leap very high. Some have been measured to leap over 30 cm! If you had this same ability for your size, you could easily jump the length of a football field! Some fleas, in particular the northern rat flea, can pick up a bacteria that is dangerous to man. This bacteria causes a disease called the bubonic plague, or black death. In the 14th century, the plague killed one out of every four people in Europe. Although fleas that carry this bacteria can live on other animals, like squirrels, the chance of getting the plague in the United States is very remote. California has only about two cases of plague per year. Bubonic plague is still a very serious problem in parts of Asia and Africa.

The best way to control fleas is to keep your living area clean (vacuum regularly). Also, take proper care of your pets and change their bedding frequently. Finally, did you know that fleas have "fleas"? Well, it's true! Some fleas carry tiny mites on their bodies and a single flea may carry as many as 30 mites at one time!