

# Mosquito Control Patrol

## Scout Activity Program

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## *A Note to Educators:*

The enclosed material is designed to be used as a supplement, and is not all-inclusive. It is expected that the presenter is someone well versed in the subject matter at hand, who will use the Power Point slides as prompts to help organize his or her oral discussion.

The subject matter is therefore flexible; it can be adapted to any age group through use of appropriate vocabulary. Also included are a variety of games and activities to select from for the activity breaks, the choice of which should depend upon the age group being addressed.

This material has been collected from numerous sources on the internet; in the best tradition of plagiarism we have assembled the most accurate information, the liveliest of artwork, the cleverest of games and puzzles from a wide assortment of mosquito control organizations and educational institutions entirely too numerous to mention, and we thank them gratefully for their most generous contributions.

The supporting material is provided in PDF format; where appropriate, however, the corresponding Word Document is provided so that the presenter may insert the appropriate organizational logo.

Good luck!

*Pamela C. Jacobson*

Hillsborough County Mosquito  
And Aquatic Weed Control

# "MOSQUITO CONTROL PATROL"

## Activity Patch Program

### Agenda

- 09:00 Classroom session. Powerpoint presentation on mosquito biology, species, habitat, reproductive activities, and mosquito control actions to control mosquito populations.
- Activity: Build a dipper for conducting larval inspections at home.
- Homework Assignment: Conduct larval surveillance and source reduction at home, school or playground. Fill out chart detailing results of inspection.
- 12:00 Lunch (provided).
- 1:00 Career Exploration Session. Girl Scouts will rotate through four groups:
- 1) Aviation Section personnel will discuss aerial operations and show the aircraft
  - 2) Aquatic Section personnel will discuss aquatic weed control and show the airboats
  - 3) Surveillance Section personnel will discuss the trapping and sentinel chicken programs and show the Lab and Sentinel Chickens
  - 4) Mosquito and Special Projects Sections personnel will discuss biological control of mosquitoes and show the Gambusia fish tanks and various mosquito traps
- 3:00 Each girl scout will be awarded a "Mosquito Control Patrol" patch and laminated "Mosquito Control Inspector" identification card (prepared by the Administrative Section).



NO NO, MOSQUITO!

*Fun and Games with  
Mosquitoes*



Hillsborough County Mosquito and Aquatic Weed Control  
4220 Tampa Bay Blvd., Tampa, FL 33614

(813) 554-5029





# Say **No** To Mosquitoes!

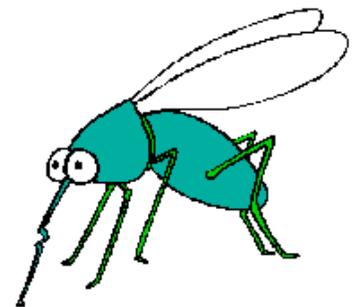
Mosquitoes need standing water in which to grow, from egg to larva to pupa and finally to hatch into a full grown mosquito. You can keep this from happening by not letting this water stay around your yard for more than a few days:

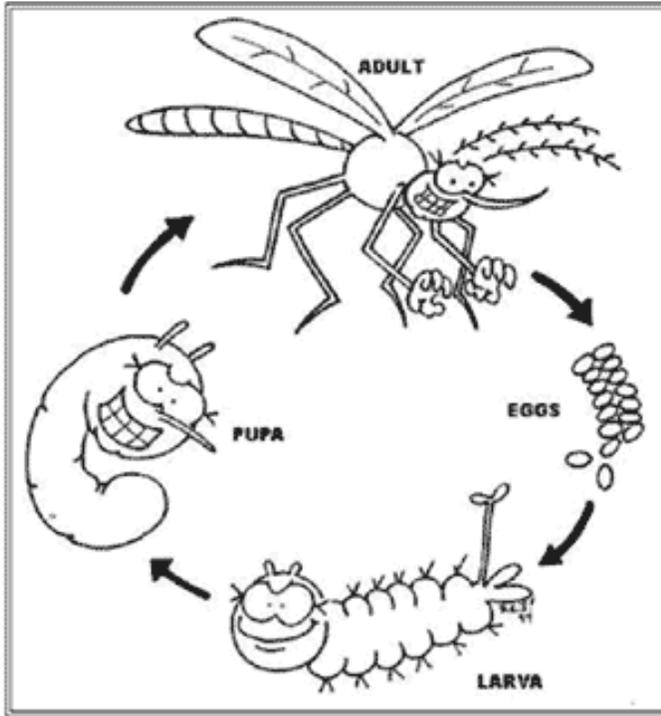
- Birdbaths – Change the water at least once a week
- Containers – Empty them, turn them over or get rid of them! These include buckets, barrels, boats, pots, saucers, toys, etc.
- Bromeliads and other hollow-stemmed plants – Rinse them with clean water at least once a week
- Discarded tires – Dispose of them or cover to keep water out
- Swimming pools and spas – Keep them well maintained, or cover them when not in use (but make sure water does not collect on *top* of the covers!)
- Rain gutters – Keep them clear of leaves and dirt so they don't get clogged and hold rain water
- Fish ponds – keep them healthy and stocked with fish, which will eat mosquito eggs and larva
- Catchbasins and storm drains – Call us if you suspect that mosquitoes are coming from these sources

*Keep reading for more information and fun games to play!*



*Circle all the places  
around the house  
and yard where mosquitoes  
might lay their eggs.*

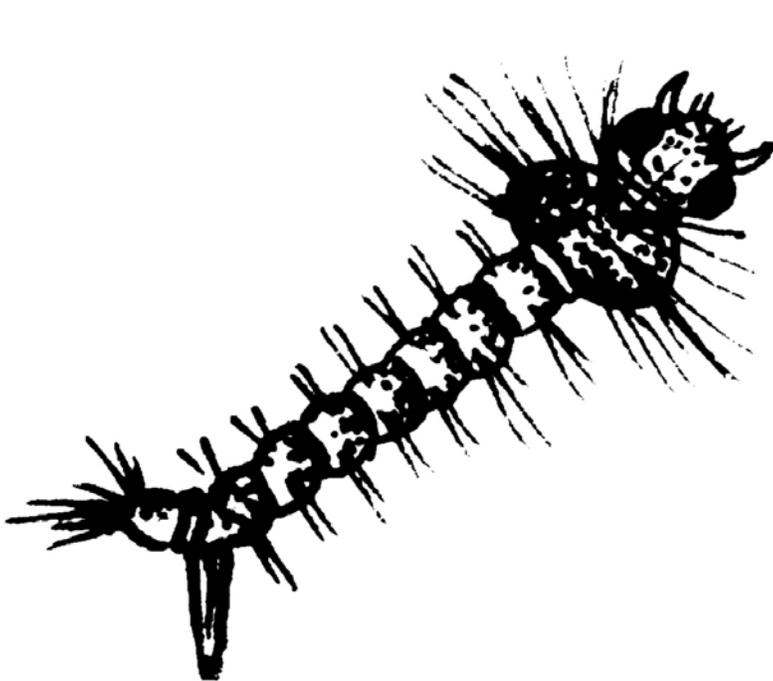




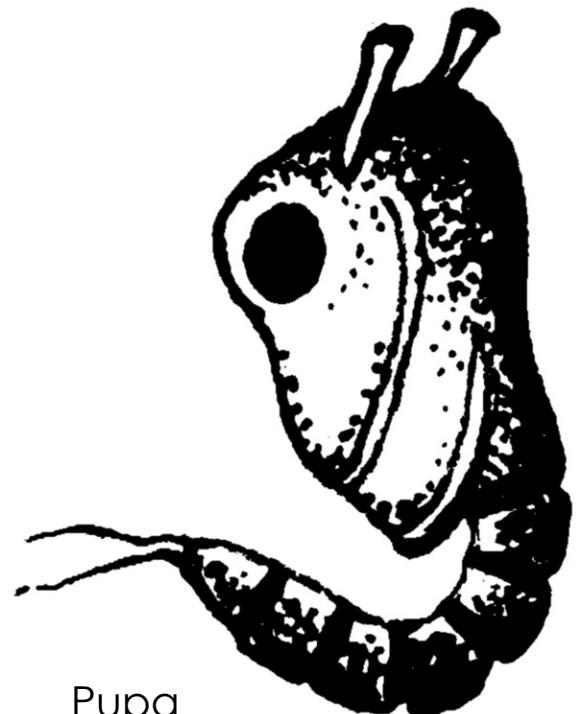
*Which came first,  
The Mosquito  
Or the Egg?*

No one really knows for sure. But what we **do** know is that mosquitoes go through four stages of growth: Eggs hatch into

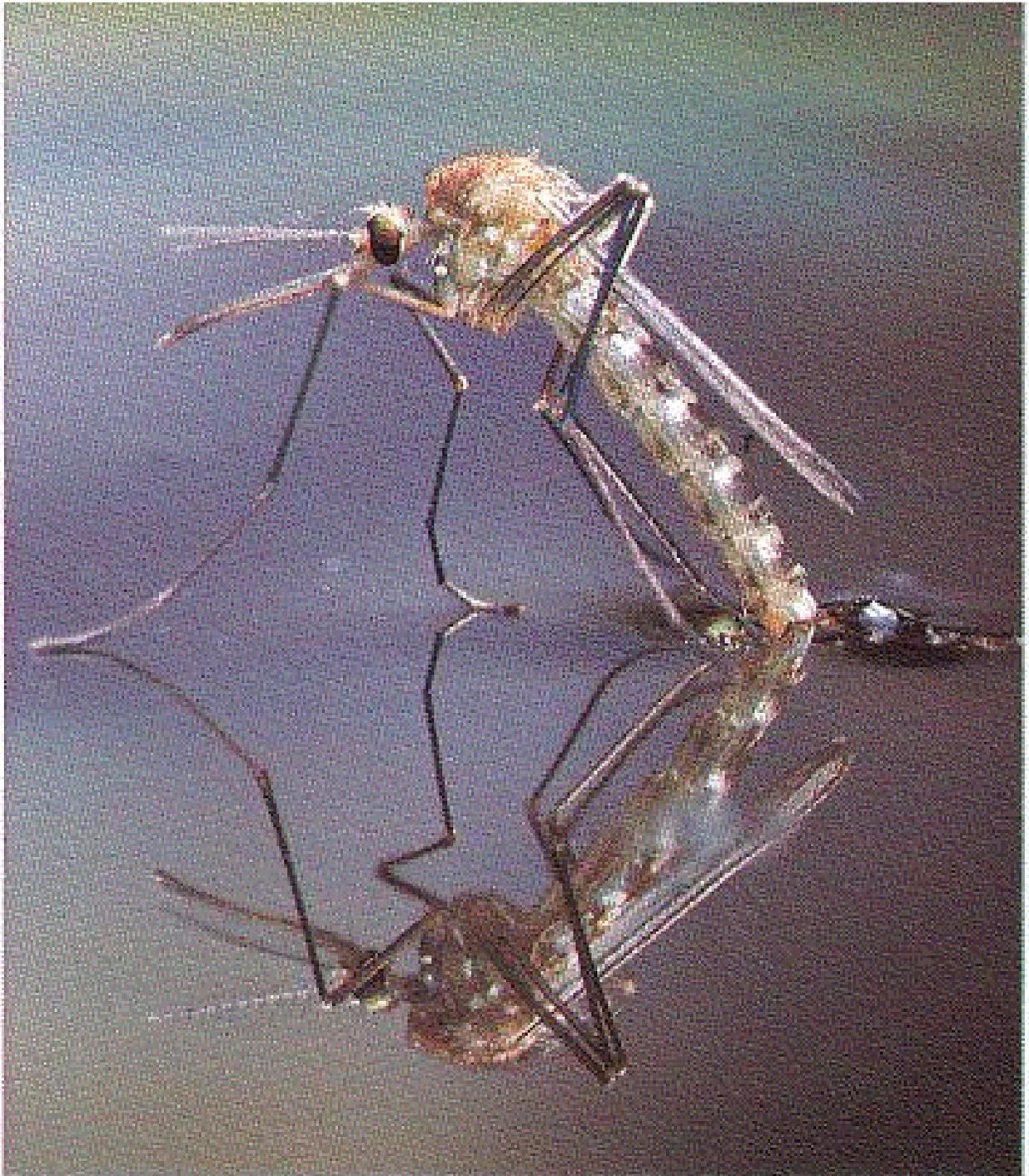
larva, which curl up into pupa, which then split open, and out climbs a full grown mosquito! This whole process takes anywhere from days to weeks, depending upon outside temperatures. The warmer it is, the faster they grow! Here are some “baby” mosquitoes for you to color.



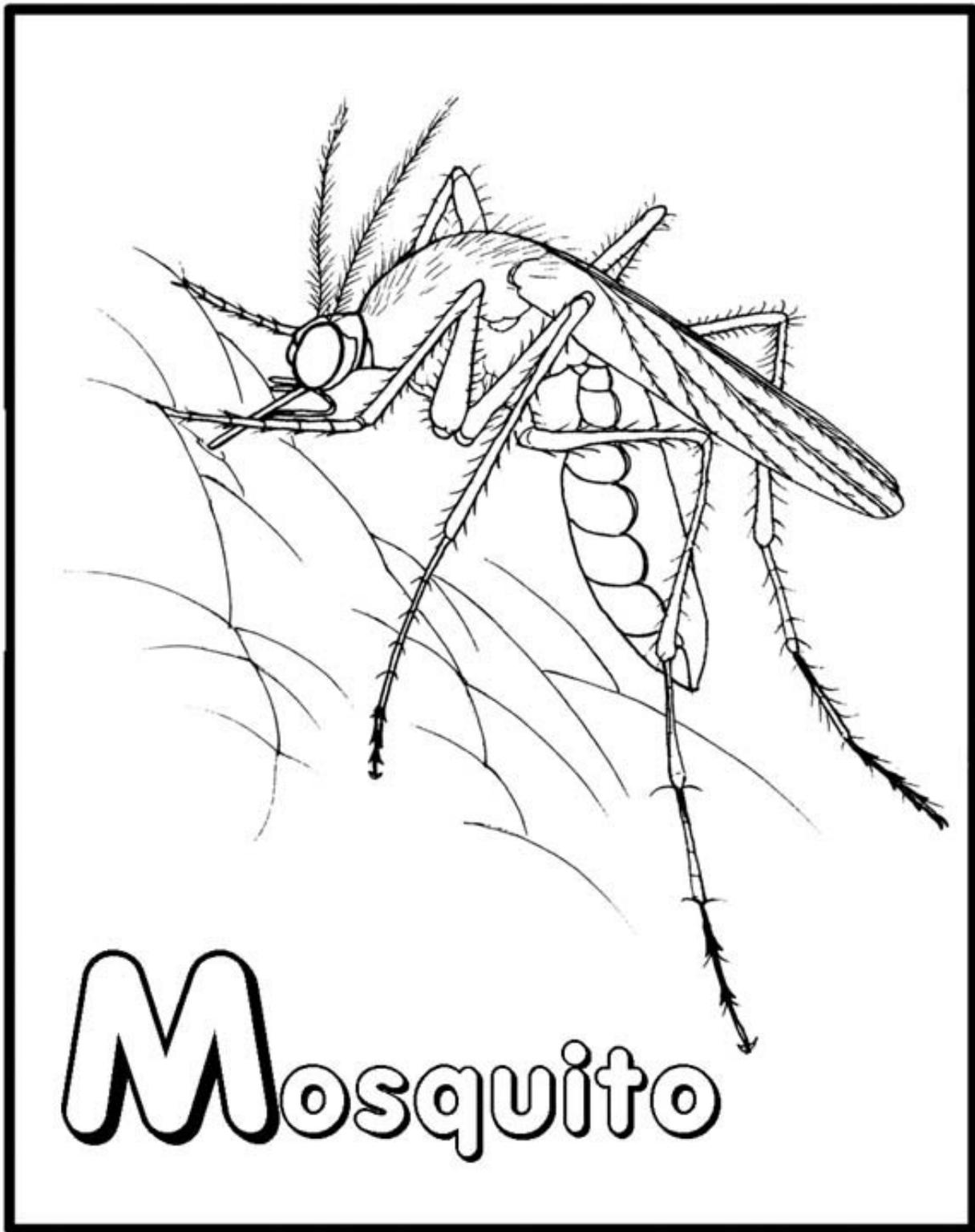
Larva



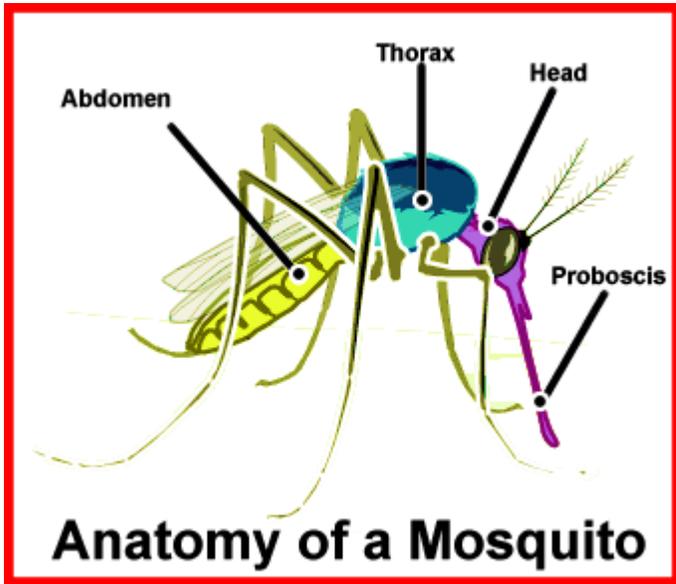
Pupa



When it's time to hatch, the pupa case splits open, and the mosquito climbs out, rests on top of the water long enough to dry its wings, and then it flies away!

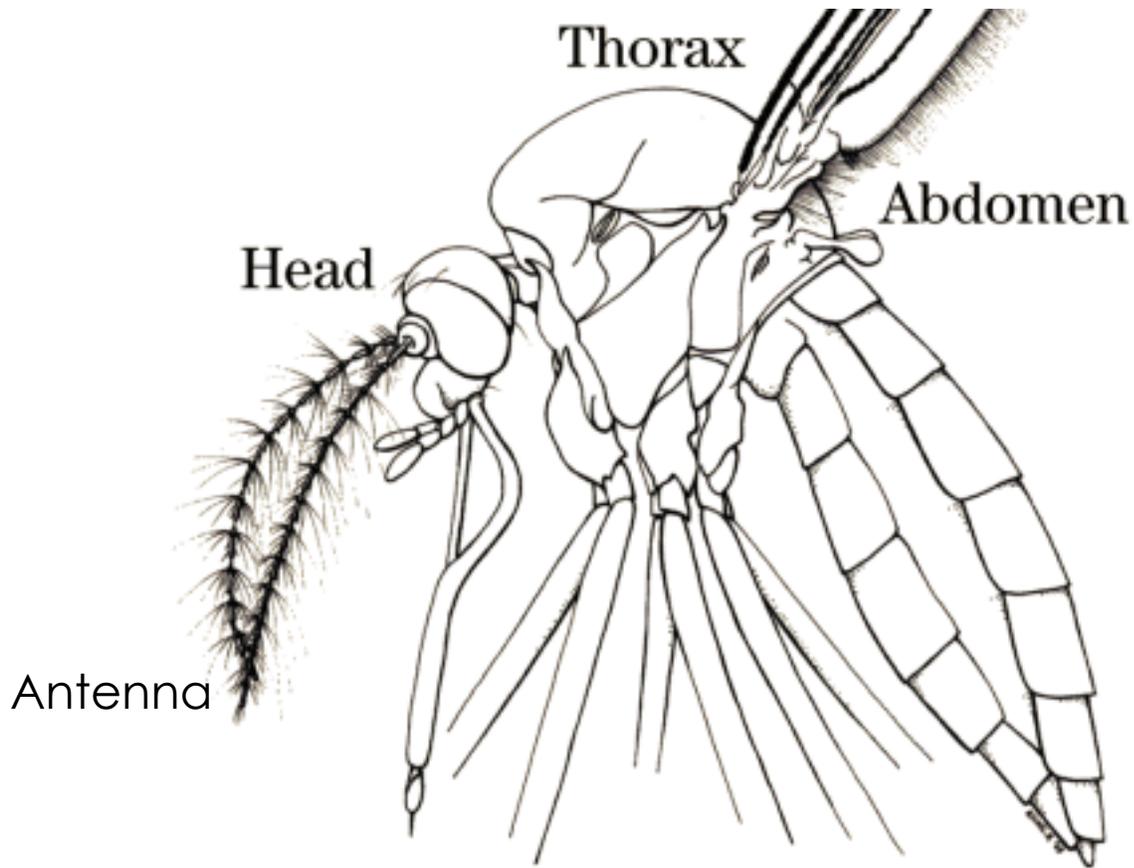


Mosquitoes actually have many different colors. What colors will you use on this one?



Mosquitoes have three main body parts: The abdomen, thorax, and head. They have one set of wings and six legs. They also have two antennae; male mosquitoes have much more hairs on

their antennae (like beards!) The proboscis is what they use to suck your blood!

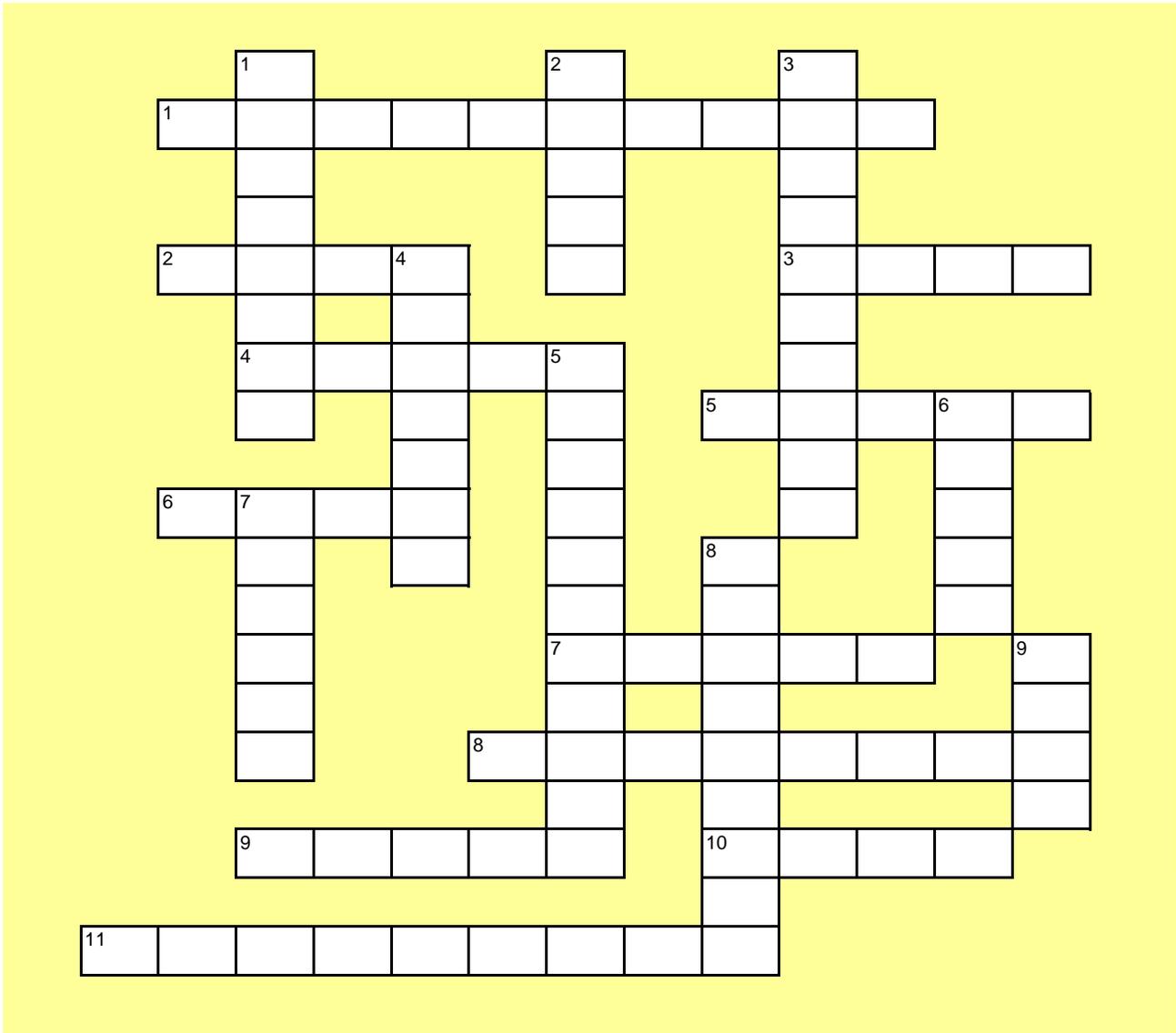
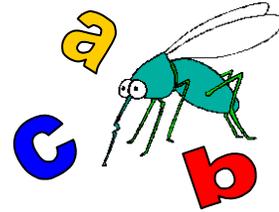


Can you tell if this mosquito is a boy or a girl?



Connect the dots and see what's waiting to bite you!

# Mosquito Crossword



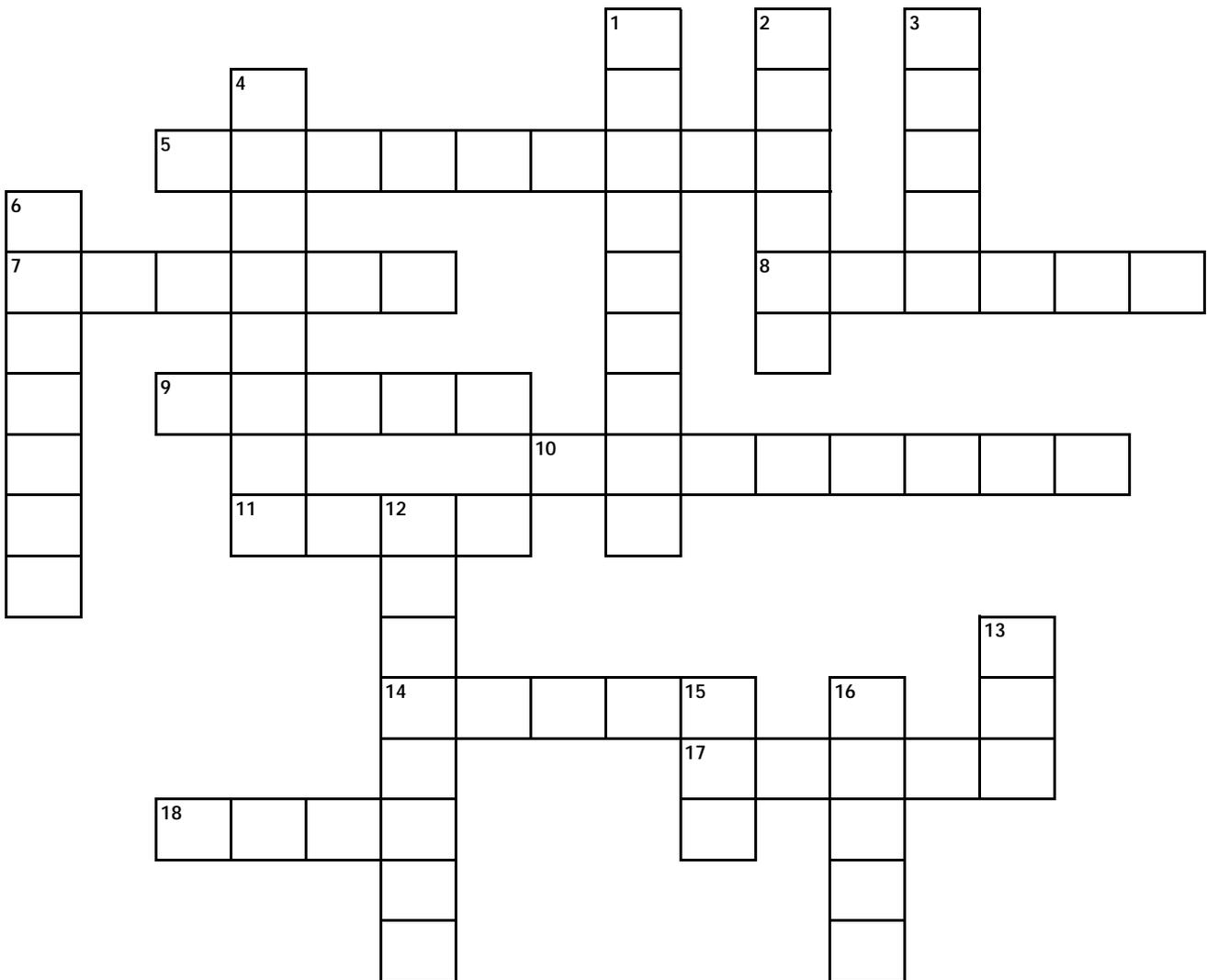
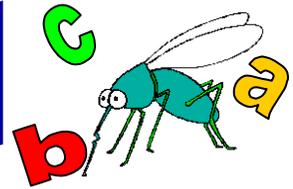
## ACROSS

- 1 Meant to keep your pool clean, they can sag and hold water on top of them.
- 2 Third stage of mosquito growth
- 3 Mosquitoes need blood to nourish these
- 4 Aedes Albopictus, the Asian \_\_\_\_\_ mosquito.
- 5 Second stage of mosquito growth
- 6 Effective repellent spray should contain this:
- 7 Better on your car than in your yard:
- 8 Cats and dogs need these, but keep the water fresh!
- 9 Mosquitoes need these to fly.
- 10 Put these away when you're finished playing!
- 11 Part of the mosquito used to suck blood.

## Down

- 1 Disease-transmitting flying pest.
- 2 Keep these full of fish to prevent mosquitoes!
- 3 Hollow-stemmed flowering plants.
- 4 Aedes \_\_\_\_\_, the "yellow fever mosquito."
- 5 Meant to drain water from your roof, they can hold standing water when clogged.
- 6 West Nile \_\_\_\_\_.
- 7 Eastern \_\_\_\_\_ Encephalitis infects horses as well people.
- 8 Our feathered friends love these, but keep them rinsed or the mosquitoes will find them too!
- 9 Gambusia and other \_\_\_\_\_ love to eat mosquito larva.

# Mosquito Crossword



**DOWN:**

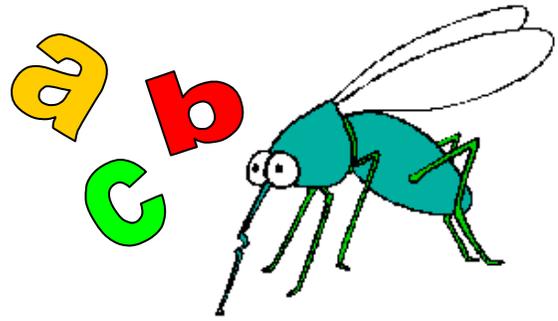
1. A Mosquito feeds with its \_\_\_\_\_.
2. Only the \_\_\_\_\_ mosquito bites.
3. Mosquitoes need \_\_\_\_ to live and develop.
4. A disease spread to humans by mosquitoes is \_\_\_\_\_.
6. Mosquitoes are \_\_\_\_\_.
12. The name for the mosquito fish is \_\_\_\_\_.
13. A \_\_\_\_ is a night hunter that eats mosquitoes.
15. Most container breeders feed during the \_\_\_\_\_.
16. Mosquito larvae turn into \_\_\_\_\_.

**ACROSS:**

5. A disease spread to dogs by mosquitoes is \_\_\_\_\_.
7. Male mosquitoes eat \_\_\_\_\_.
8. Mosquito eggs hatch into \_\_\_\_\_.
9. Mosquitoes have two \_\_\_\_\_.
10. Bad \_\_\_\_\_ are spread by mosquito bites.
11. The first stage of mosquito reproduction is \_\_\_\_\_.
14. Female mosquitoes need the protein found in \_\_\_\_\_ to make eggs.
17. \_\_\_\_\_ mosquitoes start and end the life cycle.
18. Mosquitoes have six \_\_\_\_\_.

# Mosquito Scramble

See how many of the scrambled words you can figure out!



				G	I	W	S	N	
		R	X	H	A	T	O		_____
				D	A	H	E		_____
S	P	B	O	S	C	R	I	O	_____
		T	A	B	H	I	T	A	_____
				O	B	O	D	L	_____
				A	P	P	E	U	_____
					S	G	E	G	_____
		A	V	E	R	L	A		_____
		C	E	N	T	R	A		_____
	N	T	A	N	E	A	N		_____
			A	T	E	W	R		_____
	A	D	N	M	B	E	O		_____
				G	E	S	L		_____
I	O	T	S	U	O	M	Q		_____

# Mosquito Word Find

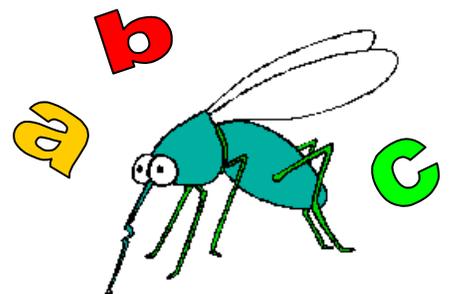
S	P	M	A	W	S	L	A	B	D	O	M	E	N	A
O	M	S	R	O	L	A	R	V	I	C	I	D	E	Z
T	S	L	F	P	S	Y	O	M	F	E	W	D	C	E
W	E	B	L	O	O	D	M	E	A	L	E	L	T	P
K	K	V	F	R	C	U	L	E	X	S	O	V	H	U
R	A	M	U	I	F	E	W	A	Q	H	K	B	O	P
F	L	O	O	D	W	A	T	E	R	S	T	N	R	A
B	W	A	E	G	R	T	H	S	G	W	G	U	A	E
A	D	U	L	T	I	C	I	D	E	Q	J	I	X	G
S	A	S	I	A	N	T	I	G	E	R	A	P	B	H
U	B	O	A	W	M	P	R	S	G	S	N	F	M	A
T	E	A	S	D	I	L	E	I	B	D	O	D	O	N
C	X	S	D	R	V	G	A	Y	C	O	P	I	S	T
I	M	P	E	N	E	Z	G	O	T	M	H	P	S	E
P	W	I	S	A	J	N	E	L	W	I	O	P	R	N
O	F	R	O	P	Q	Z	I	L	E	A	L	E	E	N
B	L	A	R	V	A	E	C	A	P	R	E	R	T	A
L	D	T	C	B	H	T	E	O	T	Y	S	S	T	C
A	X	O	R	E	F	J	L	Z	I	N	L	E	U	U
O	K	R	D	A	C	V	N	M	U	K	O	H	G	S
P	S	O	R	O	P	H	O	R	A	S	G	C	L	H
S	D	G	A	R	Q	E	B	L	R	A	D	T	H	M
A	G	H	M	O	S	Q	U	I	T	O	F	I	S	H
E	O	B	N	G	R	B	K	C	V	W	I	D	Y	Q
T	T	I	R	E	S	A	I	S	U	B	M	A	G	A
X	B	Y	E	O	S	I	C	S	O	B	O	R	P	S
S	D	A	I	L	E	M	O	R	B	K	D	A	E	H

Find the words below in the grid above. Words may be horizontal, vertical, or diagonal.

BLOOD MEAL  
WIGGLERS  
ABDOMEN  
ANOPHELES  
PSOROPHORA  
GAMBUSIA  
ALBOPICTUS  
THORAX  
EGG RAFT  
ASPIRATOR

ASIAN TIGER  
DITCHES  
BROMELIADS  
FLOOD WATERS  
LARVICIDE  
ADULTICIDE  
PROBOSCIS  
ANTENNA  
CONTAINERS  
MOSQUITO FISH

LARVAE  
PUPAE  
TIRES  
DIPPER  
LAKES  
SWAMPS  
CULEX  
HEAD  
GUTTERS  
AEDES





Mosquito Control Patrol  
Scouting Activity Patch

ORDERING INFORMATION:

The Mosquito Control Patrol Scouting Activity Patch can be ordered online at

<http://www.classb.com/patches/>

Eric Hilferding is quite helpful and very knowledgeable about all things scouting. It is a 3" "Activity Patch" with 9 colors, and pricing as of June 2007 is

\$3.40 each for an order of 50+  
\$2.05 each for an order of 100+  
\$1.45 each for an order of 200+  
\$1.25 each for an order of 300+  
\$1.10 each for an order of 500+  
0.90 each for an order of 1000+  
0.85 each for an order of 2000+  
0.75 each for an order of 5000+

Demonstrably, it is economically advantageous for organizations to get together on the ordering process.

## Mosquito Control Patrol

# Vocabulary

## Lesson One: Mosquito Biology

- Anatomy – Structure and organization of living things (How we are all put together)
- Abdomen – The part of the body between the Thorax and Pelvis (belly)
- Thorax – The part of an insect between the head and the abdomen; that bears wings and legs
- Proboscis – Nose; long flexible snout (is actually mouthpart of mosquito, used for sipping nectar, sucking blood)
- Antenna – mobile appendages (body parts) sensitive to touch and taste – or – electrical device that sends or receives radio or television signals – *Male mosquito antennae sense sound waves created by beating of female's wings*
- Nectar – sweet liquid given off by flowers to attract insects
- Hemo-Sanguine – Hemo, when used as part of a word, means “blood.” Sanguine – of the color of blood; red
- Habitat – type of environment in which an organism (mosquito) normally lives

## Mosquito Control Patrol

# Vocabulary

## Lesson Two: Life Cycle of a Mosquito

- Electron Micrograph – graphic reproduction (drawing) of an object seen through a microscope
- Larvae – Newly hatched mosquitoes are called larvae, and look like worms. As they grow, they shed their skin, or molt. The fourth time they molt, they change into Pupae.
- Siphon – Air tube or snorkel that larvae use to breathe air from the surface of the water.
- Particle – A very tiny piece of anything.
- Pupae -- When mosquitoes are changing from larvae to adults, they are called pupae (more than one pupa). During this stage they are inactive, and curl up into a C shape, with a hard outer shell.
- Trumpet – Appendage (body part) of a pupa which is shaped like a trumpet; contains part of developing mosquito.

## Mosquito Control Patrol

# Vocabulary

### Lesson Three: Mosquitoes and Disease

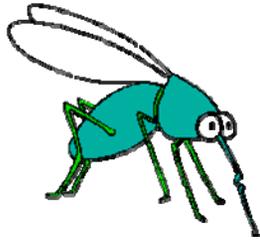
- Malaria – Infective disease caused by tiny parasites (bugs) in the blood, which destroy red blood cells and cause chills and fever; transmitted by *Anopheles* mosquitoes
- Dengue Fever – Infectious virus which causes rash, aching head and joints, also called “Breakbone Fever”; transmitted by *Aedes Aegypti* mosquitoes
- Encephalitis – inflammation of the brain caused (usually) by a virus.
- Heartworm – roundworm parasite which infests the heart of dogs, cats (rare), wolves, coyotes, foxes, ferrets, even humans (very rare – 100 cases in Florida over last 40 years). Transmitted by *Ochlerotatus Taeniorhynchus* mosquitoes, as well as 15 other species, during warm months (requires temperatures of 80 + degrees F for the worms to develop in the mosquito).
- Anti-coagulant – Substance that stops blood from clotting (creating scabs).
- Incubate – develop under favorable conditions, such as germs and bacteria. *Incubation period* – time between infection and first symptoms of illness.

## Mosquito Control Patrol

# Vocabulary

## Lesson Four: Control of Mosquitoes

- Integrated Pest Management – A pest control strategy (plan) that uses an array of complementary methods such as natural predators and parasites, biological controls, source reduction, and uses pesticides as a last resort. (*Complementary – work well together*).
- Source Reduction: To empty out containers which hold water. Anything which holds water for more than 5 days can be a *source* of mosquitoes.
- Biological Control – Use mosquitoes' natural enemies to control them, i.e. fish, bats, purple martins. Also to feed them types of bacteria which make them sick.
- Larvicide – Kill larval mosquitoes.
- Adulticide – Kill adult mosquitoes.
- Surveillance -- Keep a close watch. In mosquito control, to monitor mosquito populations and disease potential through mosquito trapping and regular testing of sentinel chicken blood for signs of exposure.
- Sentinel – Lookout, guard, or sentry. Sentinel chicken programs provide early warning of the presence of disease-carrying mosquitoes.



# My Backyard Survey

Name:

Date:

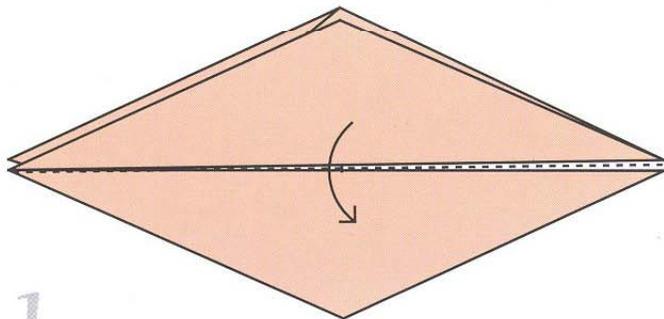
Container Type	Water (Y/N)	Larva (Y/N)	Action Taken

Container types: Treeholes, Cans, Cups, Bottles, Pet Bowls, Buckets, Tires, Barrels, Flowerpots, Toys, Wheelbarrows, Rain gutters, Sagging Poolcovers, Bird Baths and anything else capable of holding water after rainfall.

# Mosquito

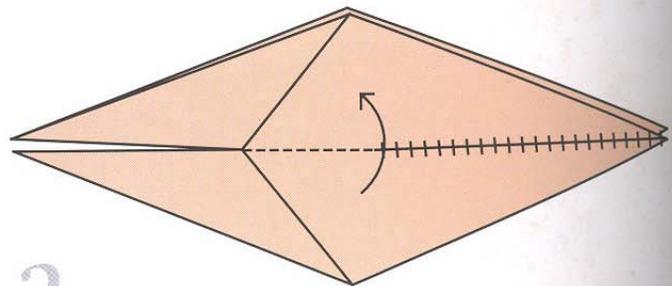


## Part 1



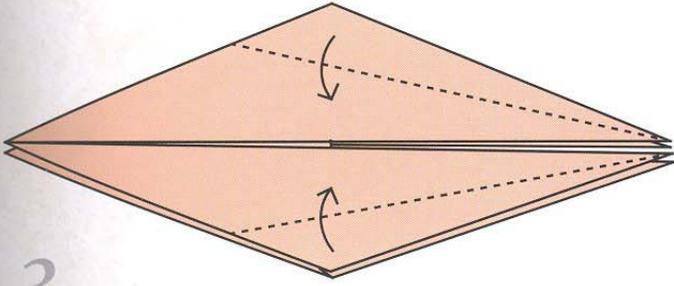
1

Start with Base Fold III, then valley fold both sides.



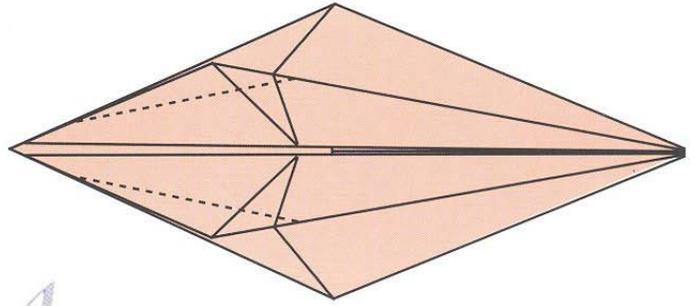
2

Cut through, then valley fold both sides.



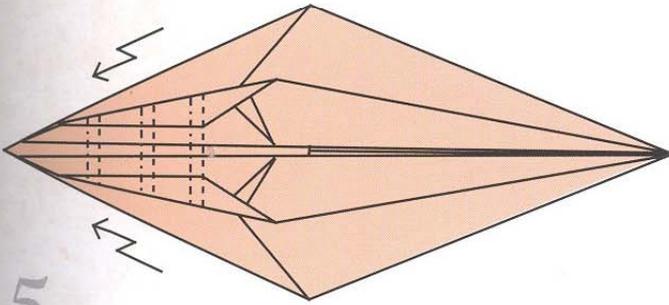
3

Valley folds to center.



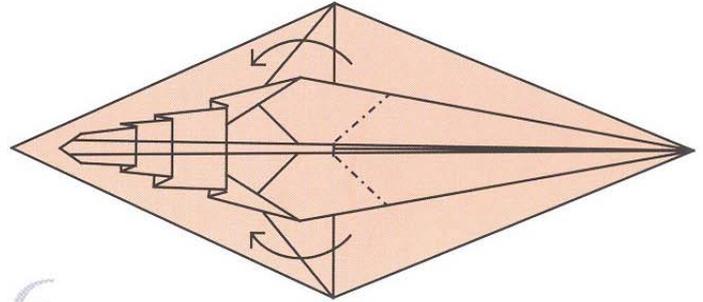
4

Valley folds.



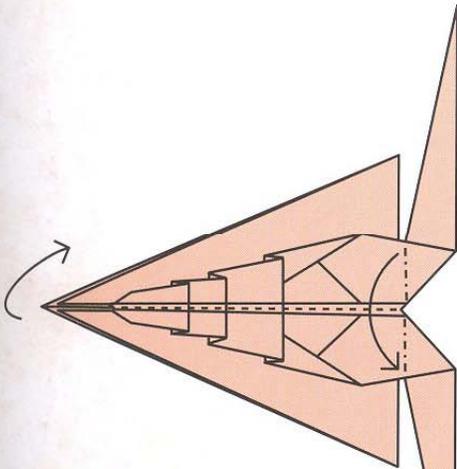
5

Pleat folds.



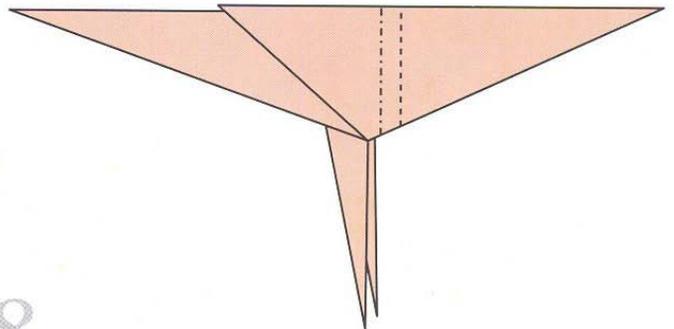
6

Mountain fold center sections out to sides.  
Valley fold outside flaps to left as shown.



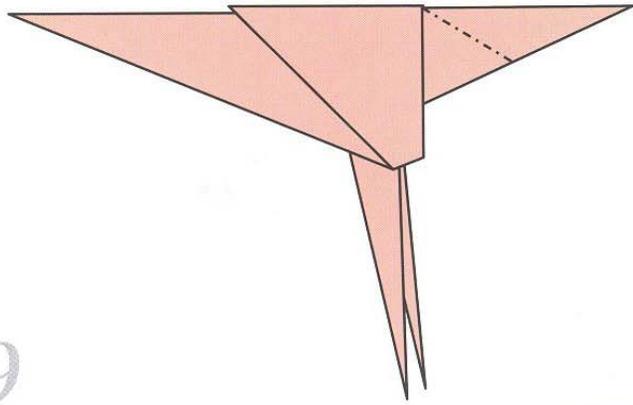
7

Mountain fold legs. Flip back flap  
to right as shown. Valley fold in half.



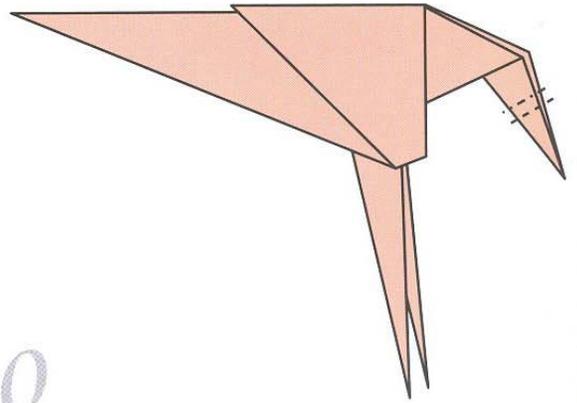
8

Pleat fold.



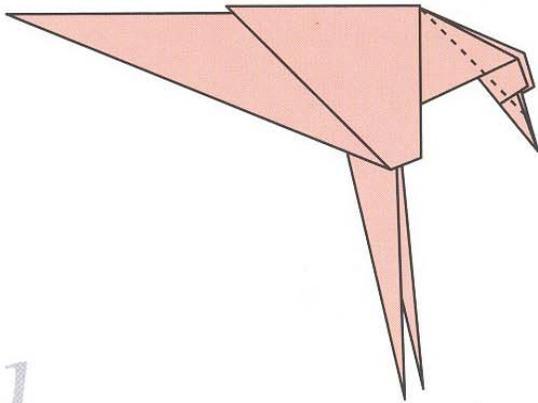
9

Inside reverse fold.



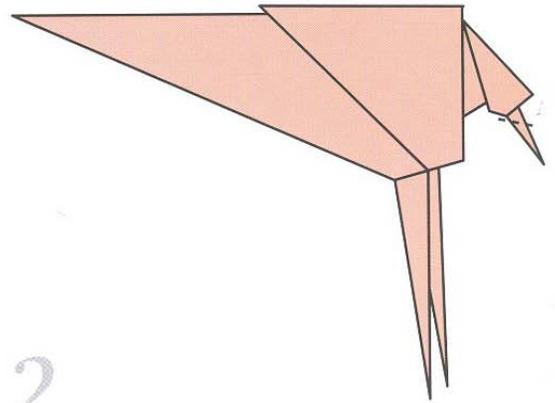
10

Pleat fold.



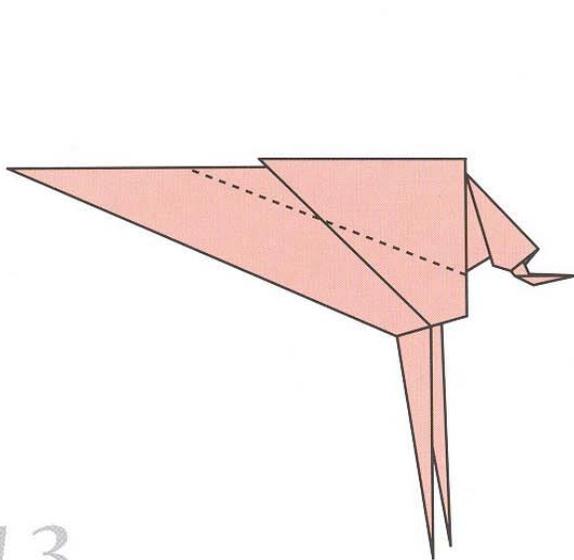
11

Valley folds both sides.



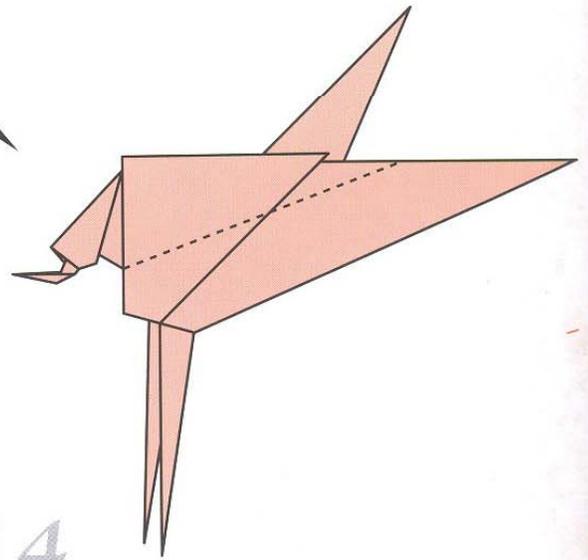
12

Outside reverse fold.



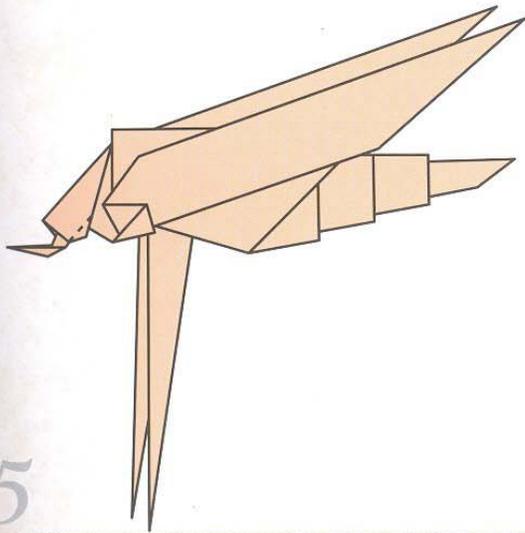
13

Valley fold, then turn over.



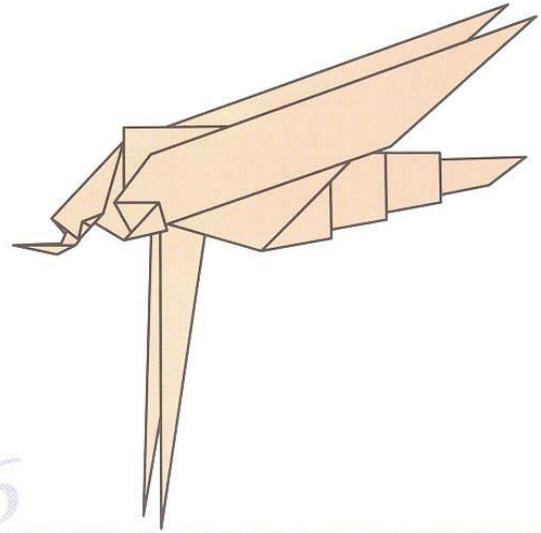
14

Valley fold.



15

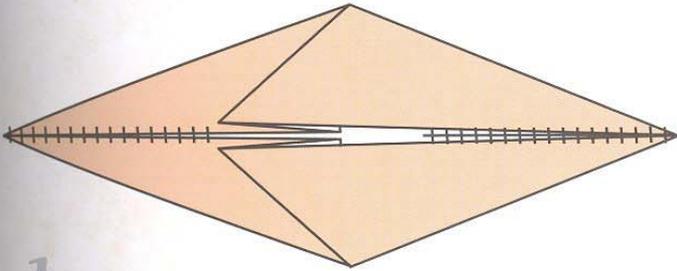
Valley folds both sides.



16

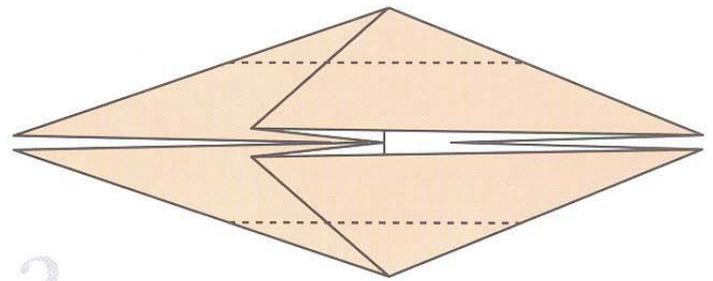
Complete part 1 (top) of mosquito.

Part 2



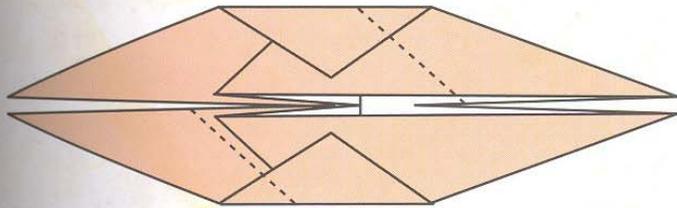
1

Start with Base Fold **X**, then cut as shown.  
I



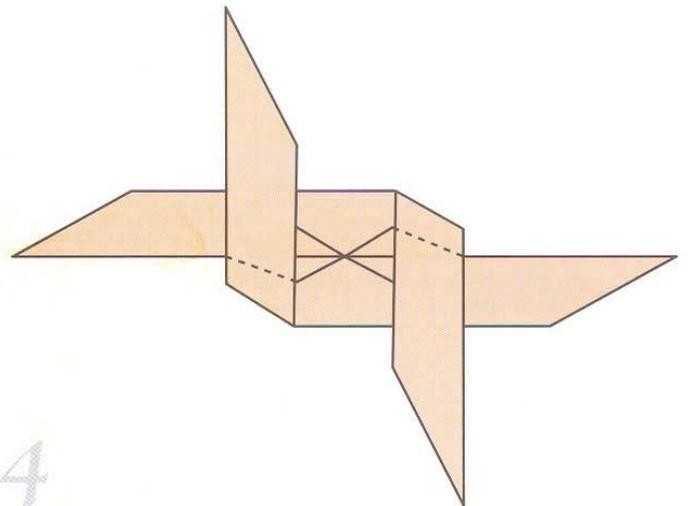
2

Valley folds.



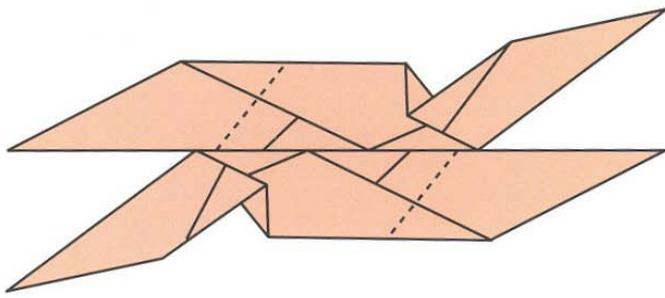
3

Valley folds.



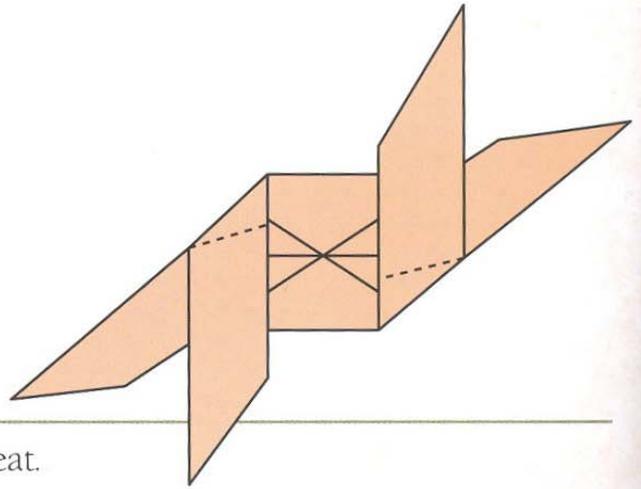
4

Repeat.



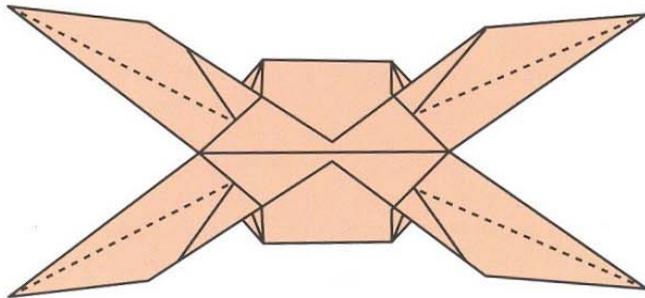
5

Valley folds.



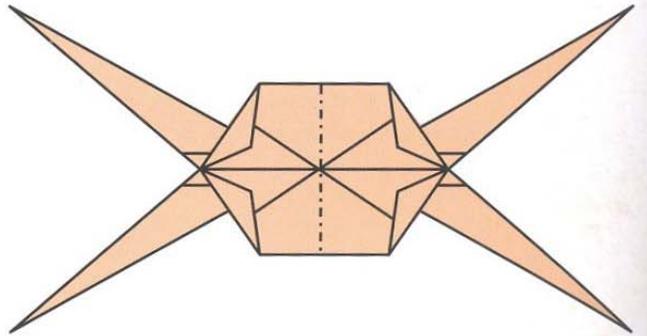
6

Repeat.



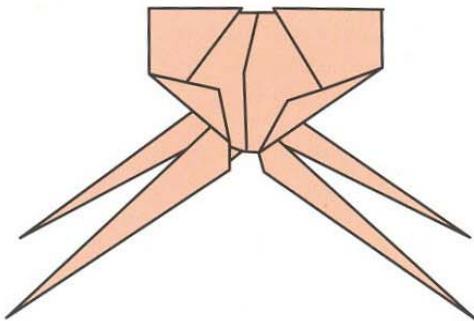
7

Squash folds.



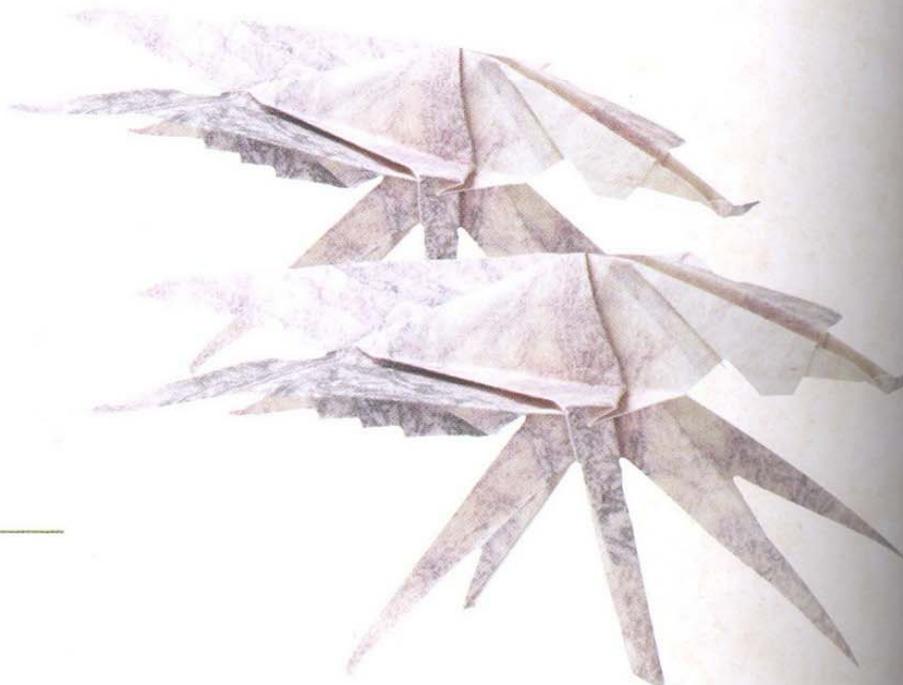
8

Mountain fold in half.

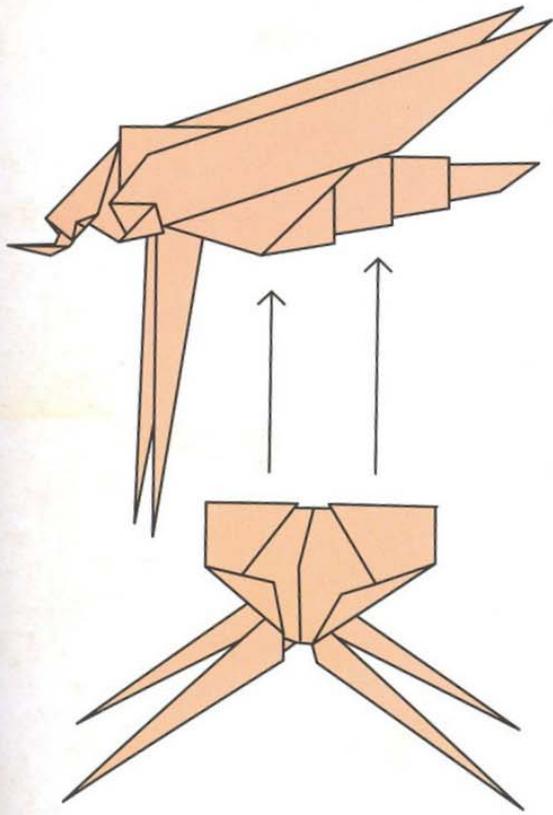


9

Completed part 2 (leg section)  
of mosquito.

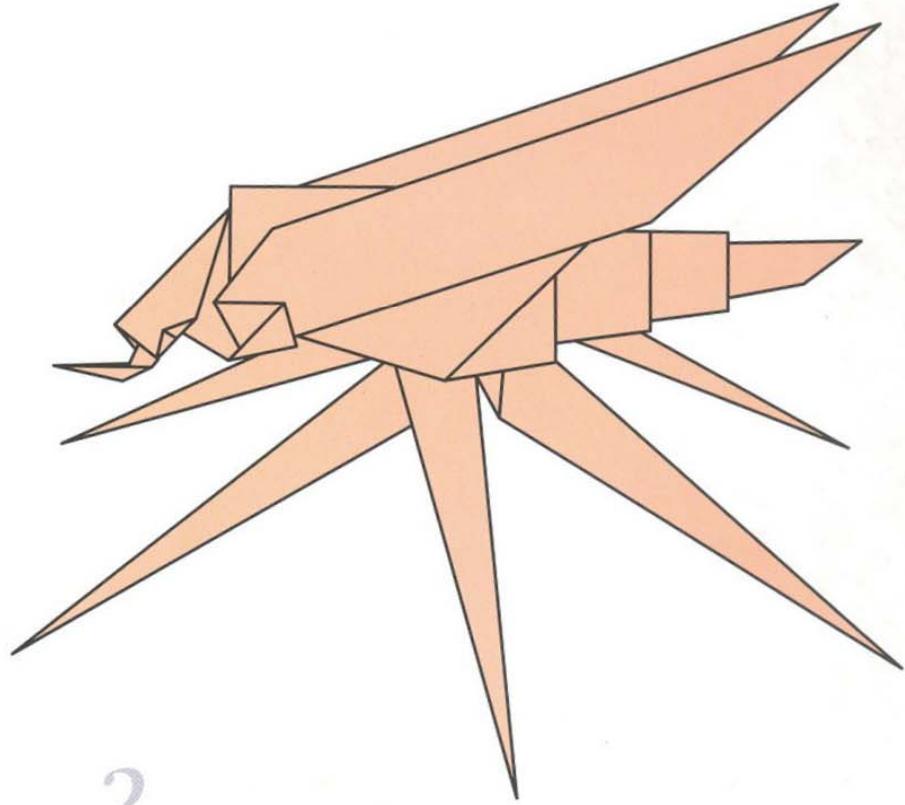


To Attach



1

Join parts 1 and 2 together as shown.  
Apply glue to hold.

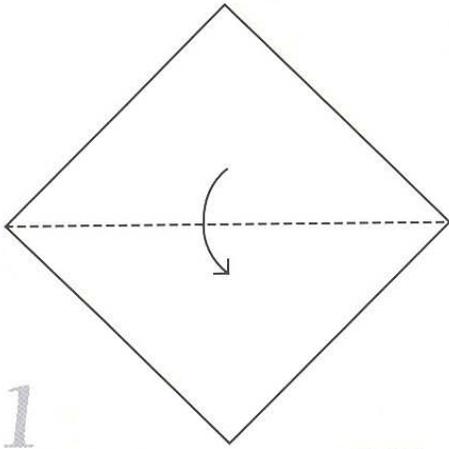


2

Completed Mosquito.

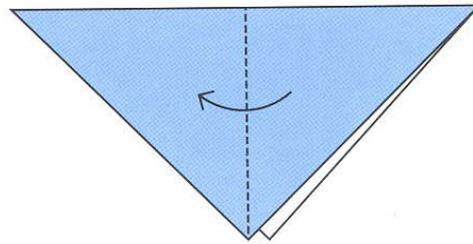


## Base Fold III



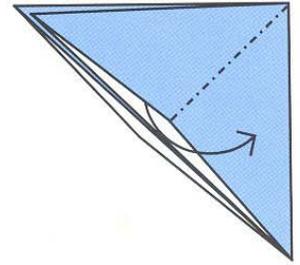
1

Valley fold.



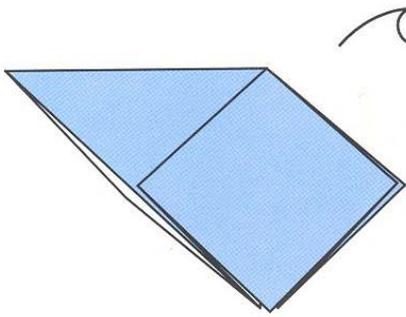
2

Valley fold.



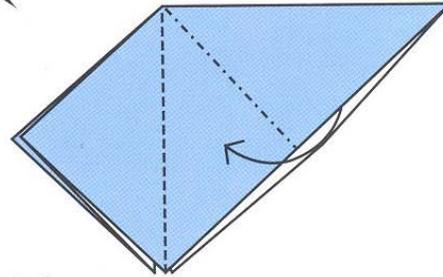
3

Squash fold.



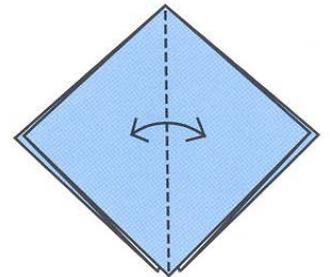
4

Turn over.



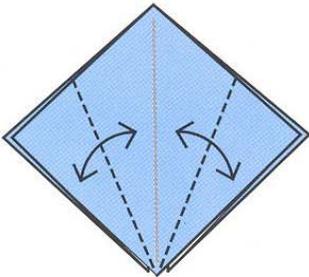
5

Squash fold.



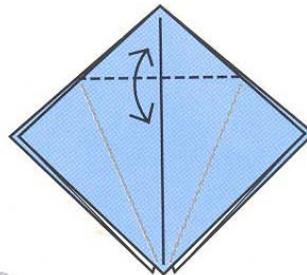
6

Valley fold, unfold.



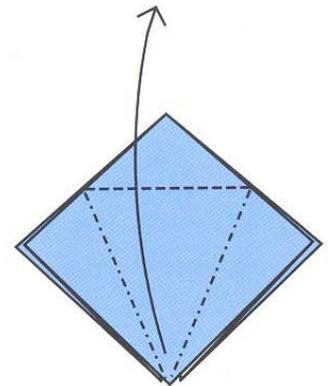
7

Valley folds, unfold.



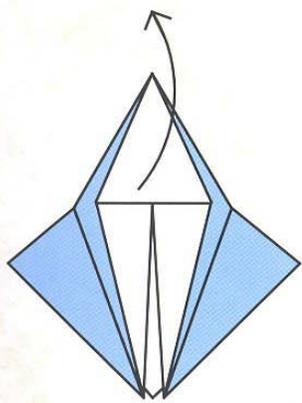
8

Valley fold, unfold.



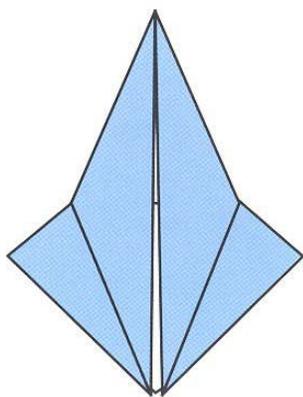
9

Pull in direction of arrow, folding inward at sides.



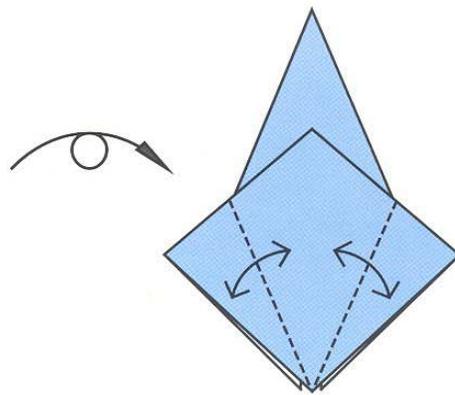
10

Appearance before completion of fold.



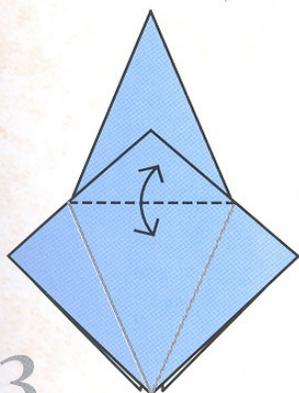
11

Fold completed. Turn over.



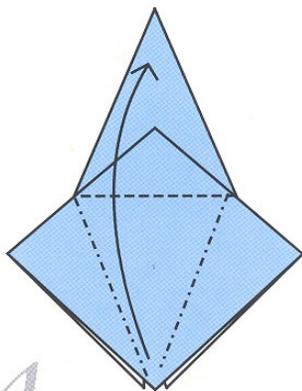
12

Valley folds, unfold.



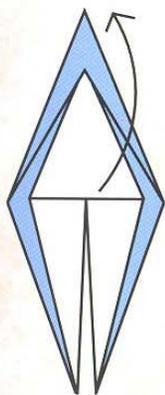
13

Valley fold, unfold.



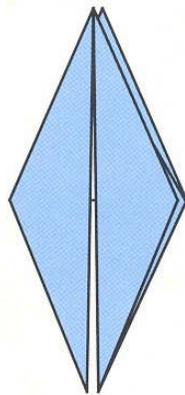
14

Repeat, again pulling in direction of arrow.



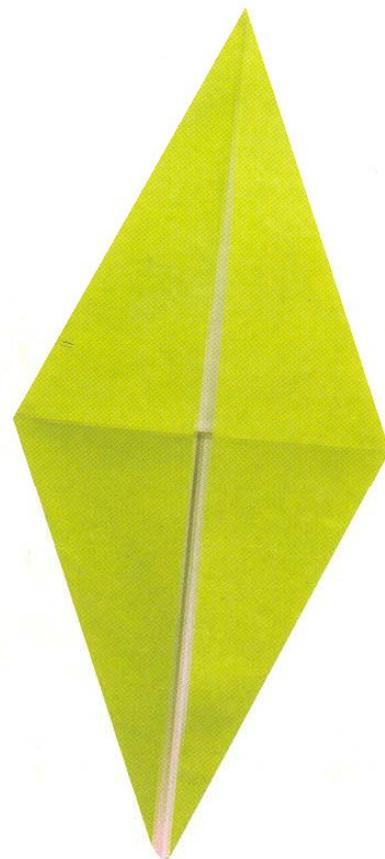
15

Appearance before completion.



16

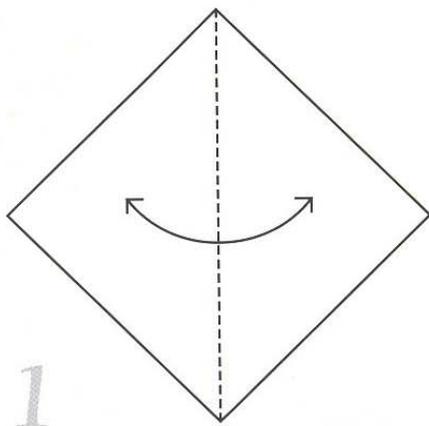
Completed Base Fold III.



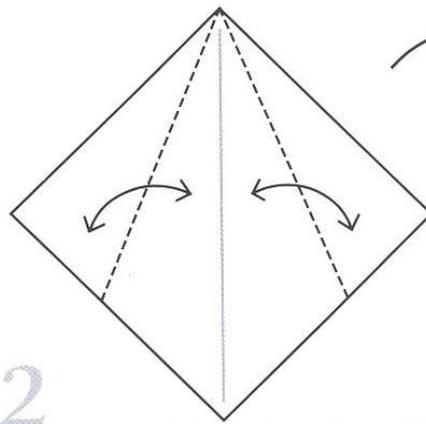
# Base Folds

Base folds are basic forms that do not in themselves produce origami, but serve as a basis, or jumping-off point, for a number of creative origami figures, some quite complex. As when beginning other crafts, learning to fold these base folds is not the most exciting part of origami. They are, however, easy to do, and will help you with your technique. They also quickly become rote, so much so that you can do many using different-colored papers while you are watching television or your mind is elsewhere. With completed base folds handy, if you want to quickly work up a form or are suddenly inspired with an idea for an original, unique figure, you can select an appropriate base fold and swiftly bring a new creation to life.

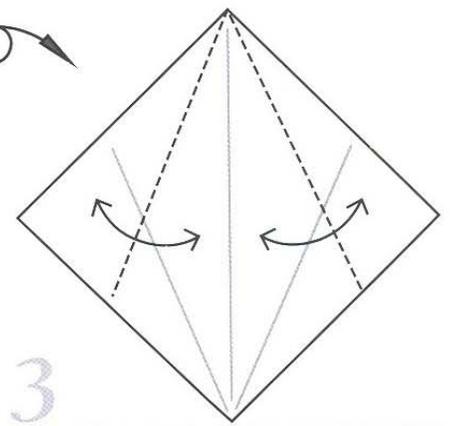
## Base Fold I



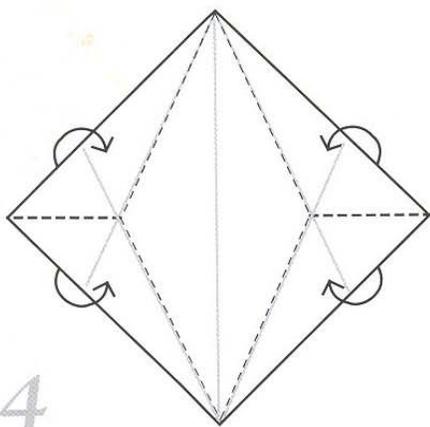
1  
Fold and unfold in direction of arrow.



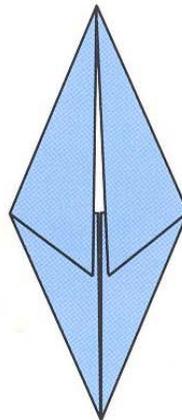
2  
Fold both sides in to center crease, then unfold. Rotate.



3  
Fold both sides in to center crease, then unfold.



4  
Pinch corners of square together and fold inward.



5  
Completed Base Fold I.



# Make a Dipper

## Materials Required:

- ¼" x 36" hardwood dowels, cut in half  
(Pearl Art & Crafts Item #673188, \$0.69 ea)
- Plastic Water Cups, 3" top diameter tapering to 2-1/2" bottom diameter, 1" deep (Pearl Art & Crafts Item #338143, \$0.39 ea)
- Single Hole Punch
- Hot Glue Gun

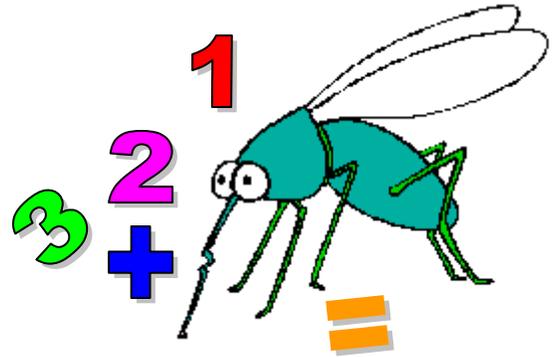
Using the hole punch, cut a round notch in the upper lip of the plastic water cup (if it does not have a protruding lip, skip this step).

Cut the hardwood dowels in half. Place a bead of hot glue from the notch down to the bottom of the dipper and firmly press the dowel in place. Hold until cool.

Discounting the hot glue, the cost of these products amounts to \$ 0.74 per dipper. Alternative products may be collected from plastic recycle collections: i.e. yogurt cups, etc.



# Mosquito Math Problems



## Problem 1:

A female mosquito lives for 150 days and lays a raft of 250 eggs every 15 days.

- A. *How many times will she take a blood meal during her lifetime?*
- B. *How many eggs will she lay in her lifetime?*

## Problem 2:

A female mosquito lays 1200 eggs in her lifetime. She lays 300 eggs in her first egg batch.

- A. *What percent of her total eggs are laid in the first egg batch?*

## Problem 3:

A mosquito lays 150 eggs in a raft. All of the eggs hatch, but 32% of the larvae are eaten by fish. The rest survive to become adults.

- A. *How many of the larvae are eaten by fish?*
- B. *How many of the larvae will survive to become adults?*

## Problem 4:

A mosquito lays 200 eggs in a raft. Ninety percent (90%) of the eggs hatch. Of the larvae that hatch, 50% are eaten by aquatic predators; the rest survive to become adults. Of the adults that emerge, 20% are eaten by dragonflies and spiders on the way to taking their first flower nectar meal.

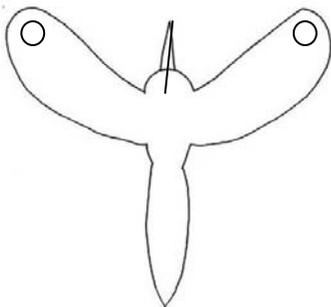
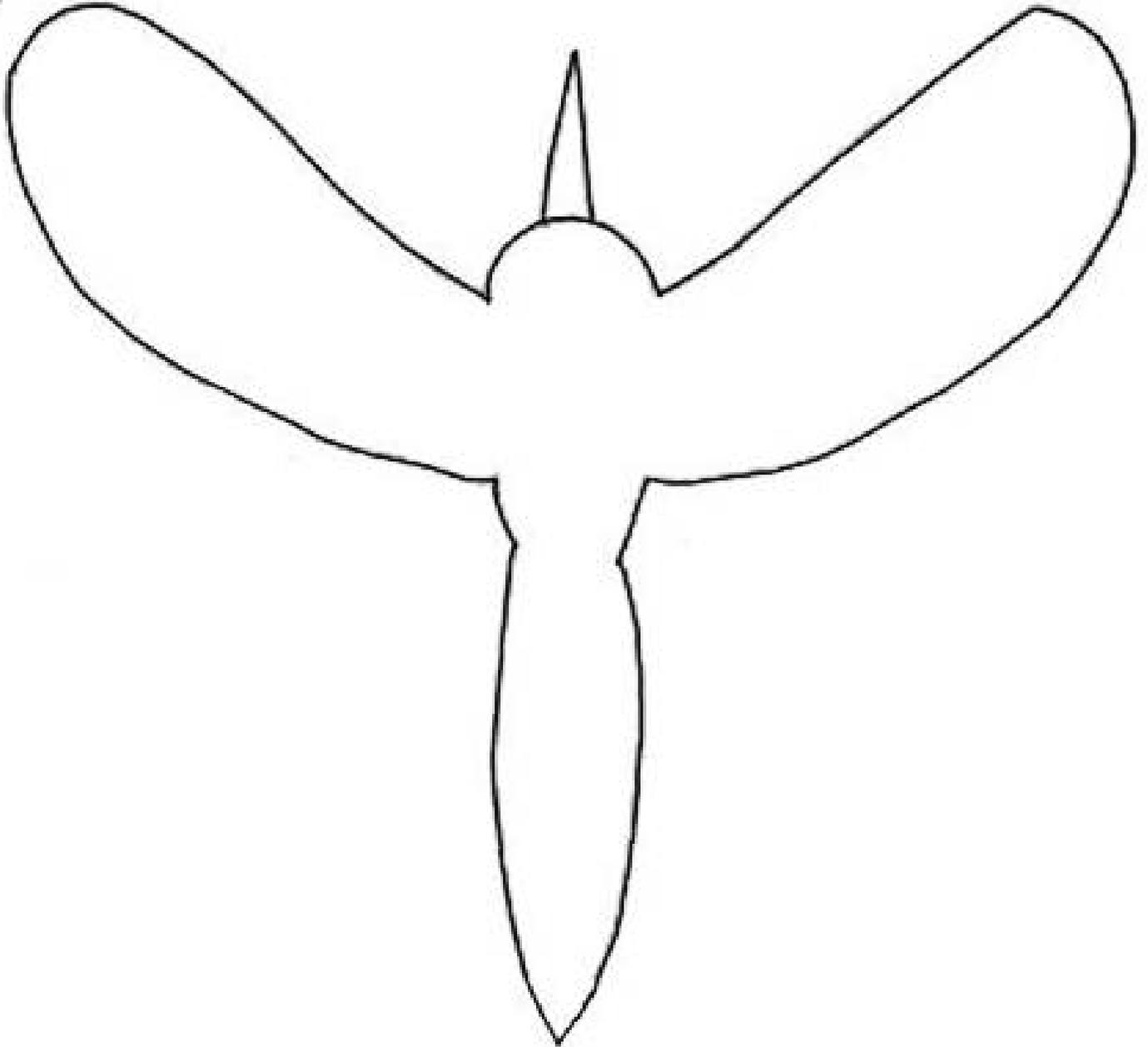
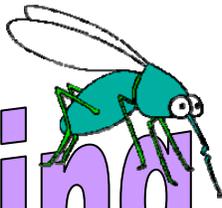
- A. *How many adults make it to the flower to take a meal?*

## Problem 5:

Two mosquitoes fly off together in search of flower nectar. The first mosquito flies 3 miles and finds a flower in a garden. The second mosquito flies 2.5 times that far, and finally finds a clover field.

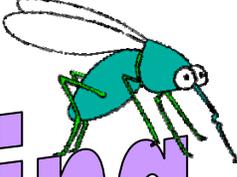
- A. *How far did the second mosquito fly?*

# Balancing Mosquito



*Back view: Place pennies at wing tips and toothpick behind proboscis.*

# Balancing Mosquito



*Make a mosquito that will balance on the tip of a finger or a pencil eraser!*

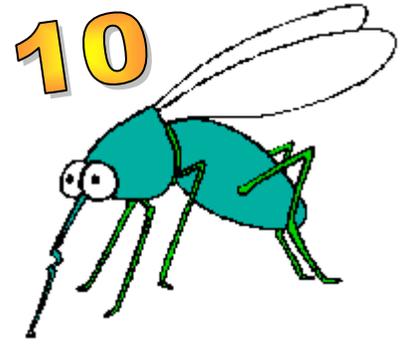
## **Materials**

Balancing mosquito template  
Heavy paper (manilla folder or cardboard)  
Crayons, colored papers, markers  
Glue  
Pennies (2 per mosquito)  
Toothpick (1 per mosquito)  
Clear tape

## **Instructions:**

- Glue the mosquito template on the heavy paper.
- Color the mosquito.
- Cut out the mosquito.
- Flip the mosquito over. Tape or glue one penny to the back of each wing as shown on the diagram. Tape or glue the toothpick behind the proboscis to reinforce the paper tip.
- Let glue dry. Then try to balance the mosquito on the tip of your finger, a pencil eraser or the corner of a desk.

# Top 10 Mosquito Fun Facts



10. An adult mosquito can live as long as 5 months. It may take several months for a larva to develop to the adult stage in cold water. Eggs of floodwater mosquitoes may remain dormant for several years, and hatch when they are covered with water.
9. An adult female mosquito weighs only about  $1/15,000^{\text{th}}$  of an ounce (about 2.0 milligrams).
8. An adult female mosquito consumes about 5-millionths of a liter in a single blood meal.
7. A mosquito wing beats from 300 to 600 times per second.
6. Male mosquitoes find female mosquitoes by listening to the sound of their wings beating. The males can actually identify the correct species by the pitch of the female's wings.
5. Mosquitoes can fly about 1 to 1.5 miles per hour.
4. Most mosquitoes do not fly very far from their larval habitat, but the salt marsh mosquito migrates 75 to 100 miles over the course of its lifetime.
3. A mosquito can smell the carbon dioxide you exhale from about 60 to 75 feet away.
2. Some people are more attractive to mosquitoes than others. It is not clear why, but probably has something to do with the 300-odd chemicals produced by the skin.
1. In the interest of science, Arctic researchers uncovered their chests, arms, and legs and reported as many as 9000 mosquito bites per person, per minute. At this rate, an unprotected human would lose one half of his blood supply in approximately 2 hours.

## Fun with Dragonflies

Radio Shack sells a remote controlled dragonfly that is lots of fun to fly outdoors. For an outdoor display, its spectacular antics will attract lots of attention to the mosquito control booth, and during periods of inactivity, it can rest next to the following informational sheet (which should be laminated).



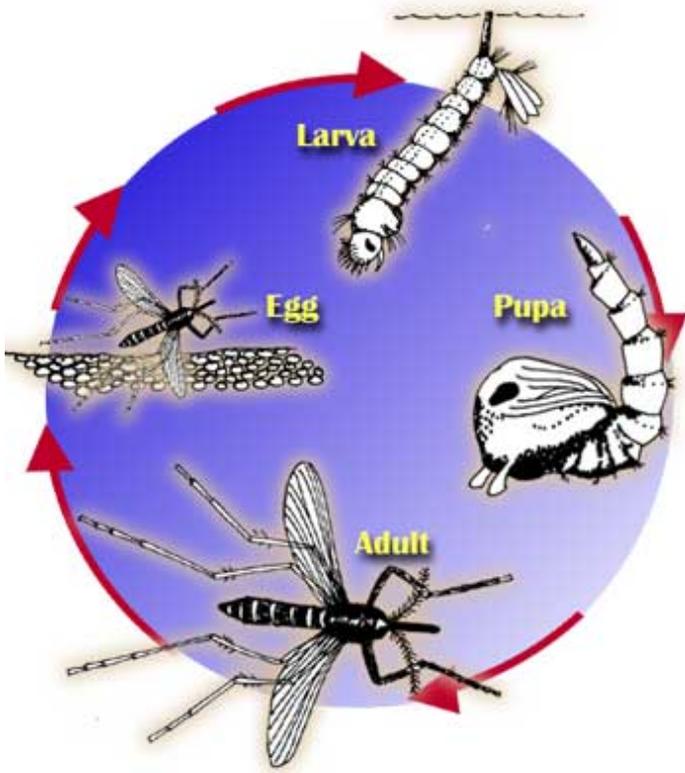
FlyTech RC Dragonfly – around \$39.99

# The Mosquito's Natural Enemy



*Dragonflies are natural predators of mosquitoes, both in their larval stage and as adults. Depending on the species, a dragonfly may exist as a larva or "nymph" anywhere from several weeks to five years, during which time it feeds on other larval insects, including mosquito larvae. As an adult, a dragonfly feeds on adult mosquitoes and other small insects. Healthy wetlands keep the mosquito population down naturally due to the presence of these and other natural predators which rely on mosquitoes for food.*

# Life Cycle of a Mosquito



A mosquito goes through four stages of life. It starts out as an egg, laid in damp soil or on the surface of standing water. Once the egg hatches it goes through four growth stages as a larva, actually shedding its skin in between stages. At the end of its fourth larval growth stage, or "instar," it curls up

into a pupa, where it continues to develop its wings and body parts inside its outer protective covering. Once it is ready to "hatch out" the outer shell splits open, and out climbs a fully developed mosquito!



## Skeeter Box

For a fun and educational display, this device can be ordered from the website: [www.theprankstore.com](http://www.theprankstore.com) for about \$5.49. Select "on-line catalog" and then select "electronic gags and pranks" from the menu on the left. It's called the "Mosquito Infuriator Incognito," and it is a light activated, or more appropriately, light de-activated electronic gadget that makes a very convincing mosquito buzzing sound whenever the lights are switched off. It can be placed in a lightweight box (if the walls are too thick it will be harder to hear the sound) and the label on the next page pasted on top. Close the box and hold it up to the ear to hear a mosquito. It integrates well with the lesson about how mosquitoes find each other by the varying pitch of their wings. To complete the display, laminate the lesson on the following page and place it next to the Skeeter Box.

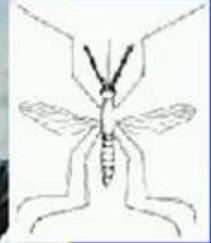
*Note: When visiting the Prank Store website, ensure no minors are present, as some of the "gags" found there are unsuitable for children.*



*"My Name is Skeeter.  
Close my box, and listen to the  
sound of my wings!"*



# ADULT MOSQUITO



**Male has bushy  
antennae**

**Female's antennae  
less hairy**

**CDC**

*A mosquito's wing beats up to 600 times per second, which is what creates the buzzing noise that we hear. Each mosquito species' wing beat has a slightly different pitch, and males sound different than females. In order to locate female mosquitoes of the same species, male mosquitoes have bushy antennae covered with finely tuned "hairs" which help them detect and differentiate the females' wing beats.*