

# A Very Dangerous Insect

A Kindergarten Inquiry Unit: Nothing But Nets

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# Unit Overview

## Unit Overview: description of kindergarten challenge

### “A Very Dangerous Insect”

Kindergarten students will receive a special letter from the NothingButNets and the U.N. Foundation asking them to help tell people about malaria and how to end this terrible disease. Attached is a curriculum plan for an inquiry mini-unit that focuses on insect characteristics, how those characteristics help animals survive, and ways in which people can be protected from some harmful animals like the mosquito. The lessons are designed to stand alone or to enhance a primary unit on insects, usually taught across the United States in kindergarten or first grades (1, 2).

The attached curriculum meets the content established by *Illinois State Goal 12; Know and apply concepts that explain how living things function, adapt and change, and Illinois State Goal 17, Understand world geography (2)*. The curriculum is color coded, linking standards and benchmarks to teaching activities. These materials include activities that engage the students as well as provide other resources (or links to specific websites) necessary to complete the unit.

The mini-unit culminates with students working in teams to create a mural and participate in a skit depicting the characteristics of insects, including mosquitoes and the impact mosquitoes have on people. The imaginary trip to Africa introduces students to the long distances between continents.

- (1) All references are made to Illinois State Goals and Standards. Please refer to your specific state's goals and standards for reference.
- (2) The curriculum also meets the content established by the Office of Catholic Schools, Archdiocese of Chicago Curriculum Framework.

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# Dangerous Insect Inquiry Learning Mini-Unit

## Kindergarten Curriculum

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# Kindergarten Letter



Dear Students,

**(Read this section on day one)**

Help! Help! There is a dangerous animal that is hurting people. It flies. It buzzes. It bites people and makes them sick.

What is this dangerous animal? Can you guess? Is it a bear? A lion? What does it look like? What if I told you that the animal is very, very small? Can you guess the name of a very, very small animal that can hurt people? The animal is a certain kind of mosquito that causes a disease called malaria. You know about colds and chicken pox and the flu, but do you know about malaria?

On the continent of Africa (find on globe) the little mosquito is biting people and making them sick with malaria. But you can save the people in Africa from getting sick and dying. How can **you** do this? You can help by learning about the mosquito and malaria as you study about other insects that live on Planet Earth.

**(Read this section on day six)**

People in Africa need your help. Now you will learn about Africa. Draw pictures showing an African child. Then show how Mosquito nets can save lives by protecting people from getting bitten.



We want people to make donations to Nothing But Nets so the United Nations Foundation can fund nets for children being infected with malaria. Your mural can tell about mosquitoes and bed nets. We hope your mural will make people want to donate money to buy more and more nets. For each \$10 received, a net can be purchased.

**Inquiry-Based Learning**  
**Unit Organizer:**  
**Nothing But Nets**

# Inquiry-Based Learning Unit Organizer: Nothing But Nets

**Author: Cheryl Russo, Dr. Emily Alford**      **Title: A Very Dangerous Animal**      **Grade Level: Kindergarten**  
 Mini-unit Overview (see lesson plans for details)

Goals/Standards: (#'S)	► CONTEXT ◀	► CONTENT ◀
<p><b>STATE GOAL 12: Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences.</b></p> <p>A. Standard A. Know and apply concepts that explain how living things function, adapt and change.</p> <p>B. Standard B. Know and apply concepts that describe how living things interact with each other and with their environment.</p> <ul style="list-style-type: none"> <li>• Identify and compare the characteristics of insects.</li> </ul> <p><b>State Goal 17: Understand world geography and the effects of geography on society, with an emphasis on the United States.</b></p> <p><b>Standard A.1:</b> Locate, describe and explain places, regions and features on the Earth</p> <ul style="list-style-type: none"> <li>• Use maps and/or globes or other resources to locate continents</li> </ul>	<p style="text-align: center;"><u>Engaging the Learner</u></p> <p>Children work in teams to identify mystery insects. They are given five or six insect pictures and separate insect names (cut out pictures and names and place in envelope). Teams are given the same insects to identify.</p> <p style="text-align: center;">Engage the students in a conversation on what these animals are called and where they might have seen them. Then ask if they know what insects do. The first grade teacher comes to the classroom to deliver the U.N. letter about malaria hurting people in Africa. She/he asks if kindergartners could help protect people from the insect that is spreading this disease. Read half of the letter on day one.</p>	<p style="text-align: center;"><u>Teaching and Learning Events*</u></p> <p><b>NOTE:</b> Each bullet point in this section has a corresponding lesson plan. The unit organizer gives teachers a summary of goals, standards, and benchmarks as well as ways in which students are engaged to begin the unit, and challenged by the final team performance.</p> <ul style="list-style-type: none"> <li>• Day 1: engage the children through the opening activities by having them identify mystery insects (insect pictures can be found on the website). Students define task and ask questions about insects (K/W) using the United Nations letter as a springboard for inquiry (send home the letter to inform parents).</li> <li>• Days 2 &amp; 3: Download mosquito and insect books from U.N. website and make multiple copies. Inquiry begins with students seeking information from on-line and other resources comparing insects and the mosquito. One book compares several insects to the mosquito and shows the basic characteristics of insects, the other book describes helpful insects. Students in pairs take a picture walk through the books then share what they learned.</li> <li>• Introduce animal features by naming various human body parts the teacher points to (hand, eye, ear, etc.)</li> </ul>
<p><b>Final Team Performance</b></p> <p>The students will create a mural showing the characteristics of insects, including mosquitoes and the impact mosquitoes have on people. The mural will also show how to protect people in Africa from mosquitoes that carry malaria.</p>	<p style="text-align: center;"><u>Individual Student Assessments</u></p> <ol style="list-style-type: none"> <li>1. Pretest and posttest – Students will label the basic parts of mosquito</li> <li>2. Students will write a sentence about insects and identify fact or fiction.</li> </ol>	

v() = outcome is assessed  
(Number refers to assessment)



# Integrated Curriculum and Instruction Design: Inquiry-Based Learning

Title: INSECTS

Grade Level: Kindergarten

Goals/Standards: (#'S)

► **CONTEXT** ◄

► **CONTENT** ◄

Engaging the Learner

- Working in pairs, students examine each other eyes. Have them describe what they see (lashes, pupils, colored parts, white parts, etc. Use magnifying glass if available. Teacher asks each pair for important information they learned, recording their facts on chart paper. Download note-taking organizer and have students record information as a post-reading
- Days 4 & 5: Review human eye features. Use online worksheet showing mosquito eye and compare to human eye. Repeat with other features.
  - Use song, Insect's Body on Dr. Jean's CD, Kiss Your Brain (optional). Order from following website [http://drjean.org/html/cds\\_f/cds\\_kiss.html](http://drjean.org/html/cds_f/cds_kiss.html) Students work to name and draw parts of a mosquito
  - Read second section of letter from the United Nations. Use globe or large map of the world. Locate Africa. Use online article to give students information about Africa.
  - Download and print the book entitled, "Nets Are Nice" from the following website:

Final Team Performance

Individual Student Assessments

√() = outcome is assessed  
(Number refers to assessment)

# Lesson Plans

# Lesson Plans

## Day One

**STATE GOAL 12:** Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences.

- A. Know and apply concepts that explain how living things function, adapt and change.
- B. Know and apply concepts that describe how living things interact with each other and with their environment.
- Identify and compare the characteristics of insects during each stage of development.

Opening Activities:

- Day 1: engage the children through the opening activities by having them identify mystery insects (insect pictures can be found at Enchanted Learning; fly, ladybug, cricket, butterfly, honeybee, dragonfly OR in Resource section of this unit). Students work in teams to match the insects with their names and discuss what they know about each one.
- Post pictures of each insect (excluding mosquito), along with their name, and ask students to tell one or two things that they know about the animal. Then, post the mosquito picture and ask what they know about this insect.
- Students define task and ask questions about insects (K/W) using the United Nations letter as a springboard for inquiry (send home the letter to inform parents). Post chart paper and follow the model below:

What are we being asked to do?

- save the people in Africa from getting sick and dying
- by learning about the mosquito and malaria as we study about other insects that live on Planet Earth.

What questions do we have now?

Will this mosquito hurt us?  
What is malaria?  
Why do people get malaria?  
Where is Africa?  
How can we help save lives?  
What are nets?

## Lesson Plans Day Two and Three

**STATE GOAL 12:** Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences.

- C. Know and apply concepts that explain how living things function, adapt and change.
- D. Know and apply concepts that describe how living things interact with each other and with their environment.
- Identify and compare the characteristics of insects.

Inquiry begins with students learning about animal features.

- Locate the mosquito and insect books found in the Resource section of this document and make multiple copies. Inquiry begins with students seeking information from on-line and other resources comparing insects and the mosquito. One book compares several insects to the mosquito and shows the basic characteristics of insects, the other book describes helpful insects. Students work in pairs and take a picture walk through the books then share what they learned.
- Write the word 'features' on chart paper. Hold up your hand as an example of a feature and ask, "What is this part of my body called?" Write the word 'hand' on chart paper under the label 'features'. REPEAT WITH SEVERAL OTHER BODY FEATURES ENDING WITH EYES.
- Working in pairs, students examine each other eyes. Have them describe what they see (lashes, pupils, colored parts, white parts, etc. Use magnifying glass if available.) They draw a picture of their partner's eye. Write the word 'eye' on the chart paper. Repeat with other body parts, including feet.
- Give pairs of students the online book, *Insect Features*. Have them read the book using words and pictures. Meet with students in their guided reading groups and summarize what they have learned about mosquitoes using the Fact Sheet from the website as a guide. From the summary of facts, students complete the note-taking form, downloaded from the website.

## Lesson Plans Day Four and Five

**STATE GOAL 12:** Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences.

- E. Know and apply concepts that explain how living things function, adapt and change.
- F. Know and apply concepts that describe how living things interact with each other and with their environment.
  - Identify and compare the characteristics of insects.

Lesson description: Compare the mosquito's eye to that of a human

- Remind children of the way their own eye is shaped. Have them re-examine each other's eyes in pairs. Hand out the worksheet showing the mosquito eye (<http://biotech.arl.arizona.edu/images/T092.jpg> ). Students draw a human eye on the worksheet. Compare the human eye to that of a mosquito. Repeat, focusing on the human nose and the mosquito's proboscis.
- STUDENTS DO "INSECT'S BODY" SONG ON DR. JEAN CD: *KISS YOUR BRAIN* (#16). (CD or individual song may be ordered from the following website: [http://drjean.org/html/cds\\_f/cds\\_kiss.html](http://drjean.org/html/cds_f/cds_kiss.html) )
- Children work in pairs to name the parts of a mosquito (using online book resource). Then students draw pictures of mosquitoes. The mosquito pictures should have three body parts that are characteristic of insects.
- Students draw a picture of a mosquito for the bulletin board display.

**Lesson Plan**  
Day Six and Seven

**STATE GOAL 12:** Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences.

- G. Know and apply concepts that explain how living things function, adapt and change.
- H. Know and apply concepts that describe how living things interact with each other and with their environment.
  - Identify and compare the characteristics of insects.

Lesson description: Take an imaginary trip to Africa in order to give students background information and to help them understand the length of time it would take to visit this continent.

- Re-read the NothingButNets and U.N. Foundation letter, focus on part two, and add to task analysis from Lesson One.
- Imaginary Trip to Africa:
  1. Using a world map and globe, locate and label North America, the Atlantic Ocean, and Africa. Have students label the two continents of Africa and North America.
  2. Show a passport, if available, and explain the purpose of having a passport. Download a passport from the website: [www.abcteach.com/countries/passport.htm](http://www.abcteach.com/countries/passport.htm) Have students write their names on the passport.
  3. Tell the students that you are taking a trip to Africa. LOCATE IMAGINARY FLIGHT TO AFRICA FROM RESOURCE SECTION OF THIS UNIT.
  4. Every hour, mark the distance traveled on the map...
  5. Land in Casablanca and role-play what we see, hear, and how hot it is...
  6. Re-board the plane to fly to Kenya...
- Download and print the book entitled, "Nets Are Nice" from the following website: <http://www.malarianomore.org/kids/educational-materials.php> Read the book aloud, connecting what the book is telling to what students have learned so far. Explain how bed nets are used to protect people from getting bitten.
- Draw picture of an African child for the bulletin board. Post the pictures and as money is raised for Nets, PUT A SMALL PIECE OF NETTING OVER THE PICTURE TO SHOW THAT THE CHILD HAS BEEN SAVED FROM MALARIA.

NOTE: I CHOSE NOT TO MARK THE DISTANCE ON THE MAP FOR THE PRETEND TRIP TO AFRICA. I THINK THAT BY USING THE THREE MEALS AND TIME IN BETWEEN AND LANDING AT MIDNIGHT (CASABLANCA TIME) THE CHILDREN WILL GET THE IDEA THAT AFRICA AND THE MOSQUITOES ARE VERY FAR AWAY FROM US

## **Lesson Plan Day Eight**

Final Activity: Mosquito Skit

Girls dress in simple costumes to play the part of the female mosquitoes (only the female bites). They wear black leotards and tights (if available) and wings (angel wings work well). Antennas are pipe cleaners attached to a plastic headband. A 9x12 paper is rolled into a cone shape and taped for the proboscis. It is attached to the girl's face by an elastic mask string. Boys wear regular school clothes

### **MOSQUITO SKIT**

Boys are spaced on stage so that girls may weave in and around them easily.

Girls fly around boys and bite them with their 'proboscis'.

One or two children enter the area and ask, "What's going on here?"

Girls stop and say (in a high pitched voice); "We're mosquitoes and we're biting people to get blood for our food."

Girls continue to go around biting each boy. After they are bitten, the boys dramatically say, "I don't feel well. That mosquito made me sick." They slowly drop to the floor.

Girls come together in a semi-circle and say, "Sorry, we forgot to tell you, we carry a disease called malaria."

# Non-fiction Reading Resources

Mystery Insects (pictures)  
Animal Features (book)  
Insects: Friend or Foe (book)  
Africa (article)  
Mosquito Fact Sheet (article)  
Insect Note-Taking Format  
Imaginary Trip to Africa (script)  
Map of Africa  
Pictures of Insects and Their Features



## Mystery Insects





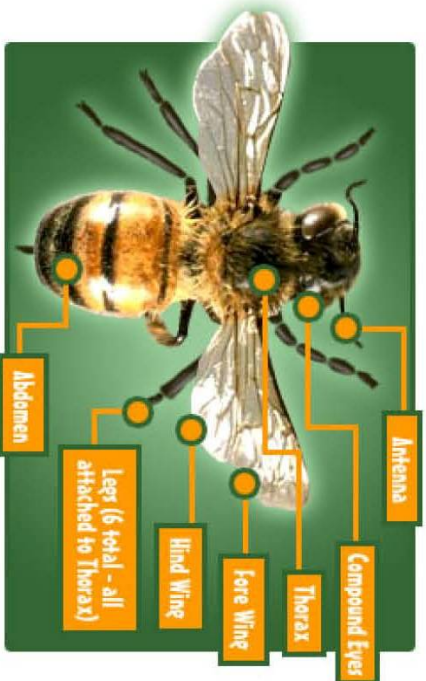


"Photo courtesy [PDPhoto.org](http://PDPhoto.org)"



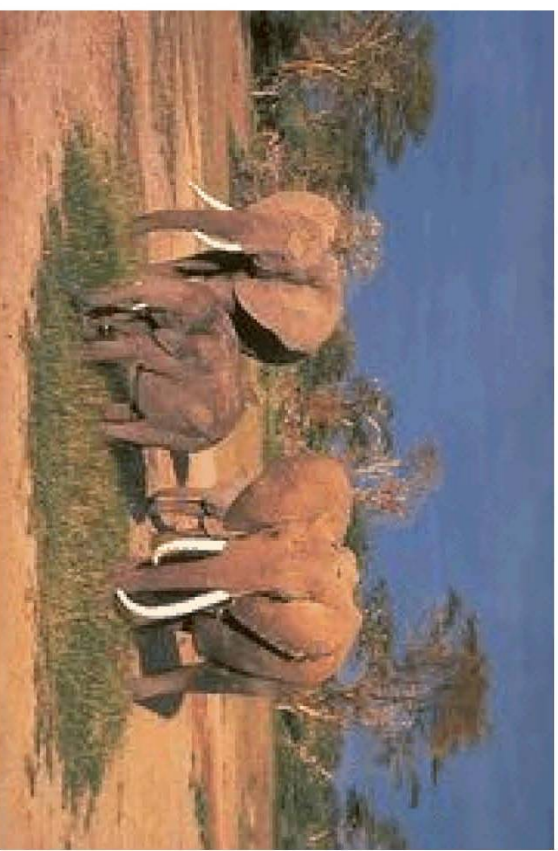
# Insect Features

## Insect Features



By Dr. Emily C. Alford

All animals have features. Can you name the features on these animals?

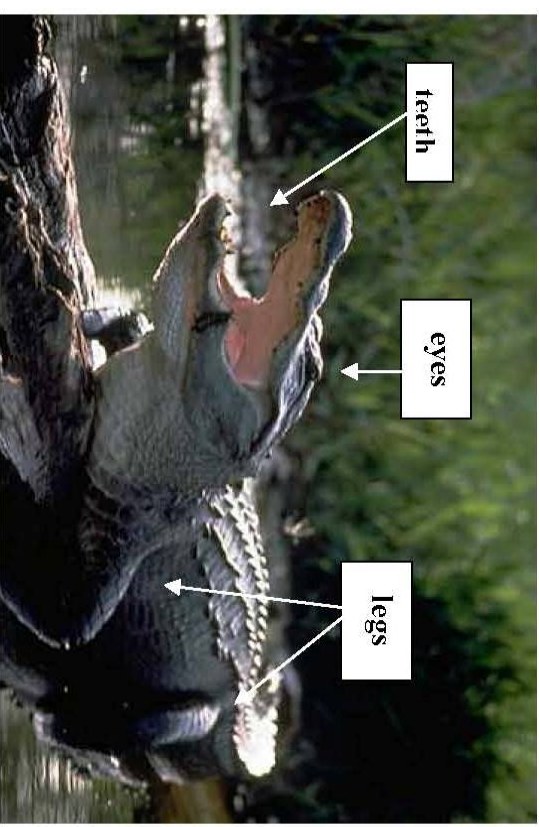


Do they have legs? Do they have ears?  
Do they have eyes? Do they have wings?

What animal has a feature like this?

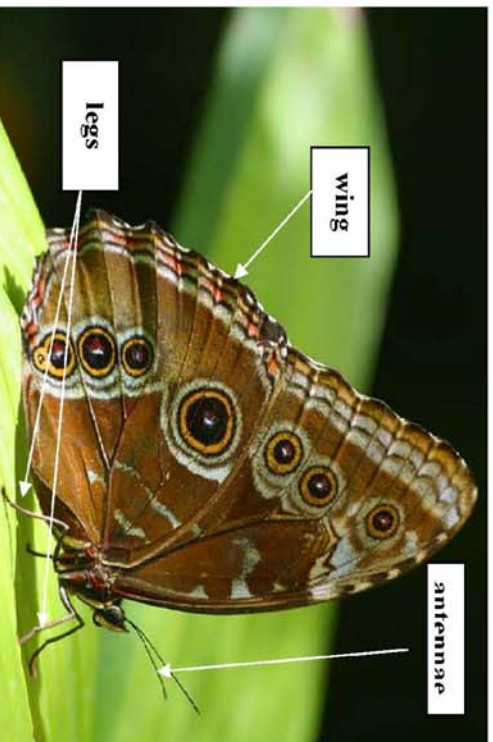


What feature is this? Do you have one?  
Do you have two? Take off your shoe and look.



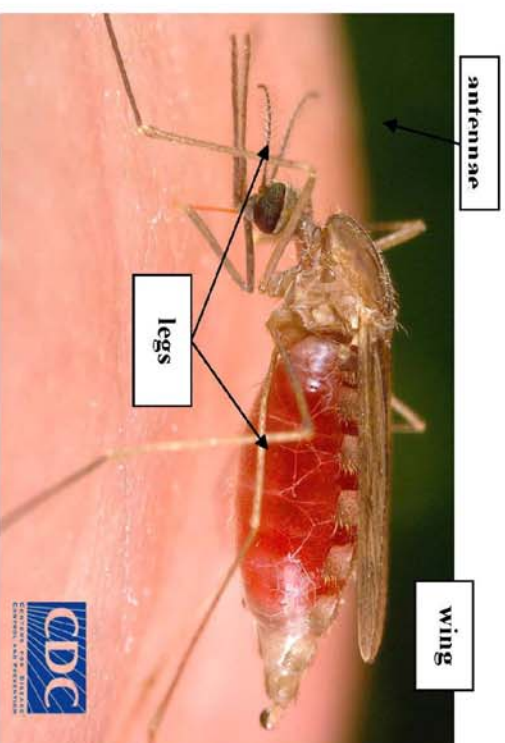
All animals have features. Can you name the features on this animal?  
Does it have legs? Does it have teeth?  
Does it have eyes? Does it have wings?

Insects are animals. Insects have features, too. Can you name the features on this insect?



Does it have wings? Does it have legs?  
Does it have antennae?

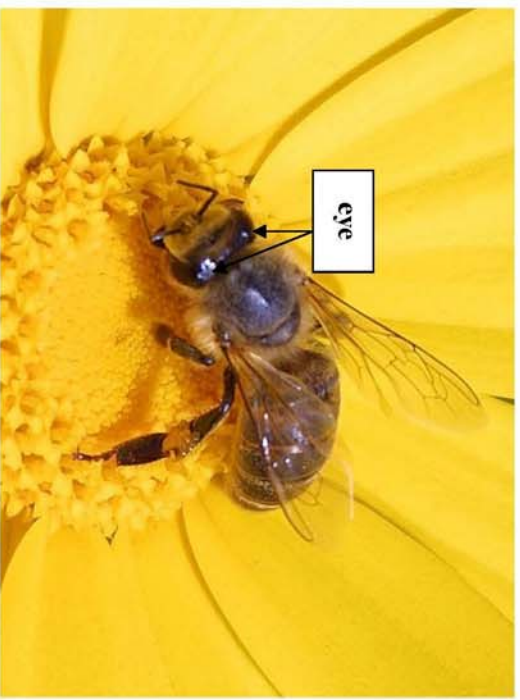
Can you name the features on this insect?



Does it have wings? Does it have legs?  
Does it have antennae?



Look at this insect's eye. Is it like your eye?



Look at this insect's eye. Is it like your eye?





Look at this insect's legs. Are these legs like your legs?



Look at this insect's legs. How many legs do insects have?



Does this insects have wings?



Does this insect have wings? Some insects do not have wings. This insect can live on dogs and cats.

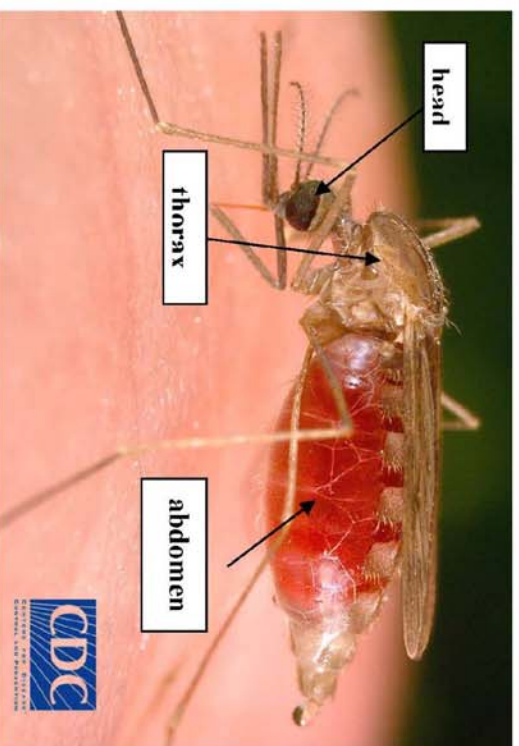


Does this insect have wings?



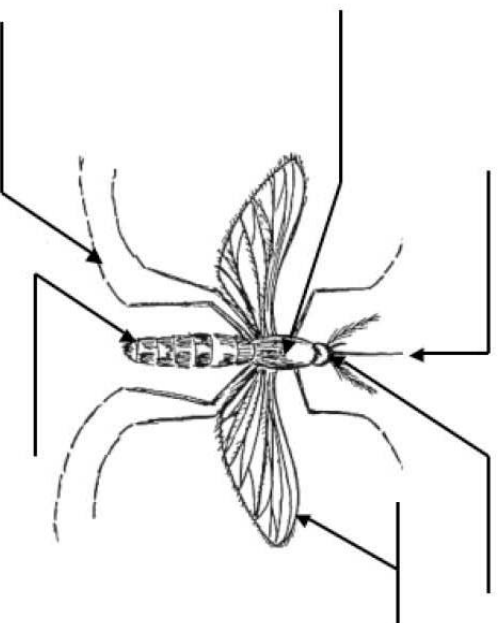
Does this insect have wings? Most insects have wings.

Insects have three body parts. They have a head, a thorax, and an abdomen.



Can you see the head? Can you see the thorax? Can you see the abdomen?

## Features of a Mosquito



head	proboscis
thorax	wing
abdomen	leg

Note: All pictures are public domain.



# Africa

Africa is a very big and special continent on the earth. If you would fly on an airplane from the United States to Africa you would have to cross the Atlantic Ocean. It will take you all day to get there. If you leave at breakfast you will get to Africa at bedtime.

When you get to Africa will see many kinds of lands. Grasslands cover much of Africa. There are very hot and dry lands called deserts. There are wet and rainy areas called rain forests near the equator. The equator is the imaginary line that runs through the middle of Africa.

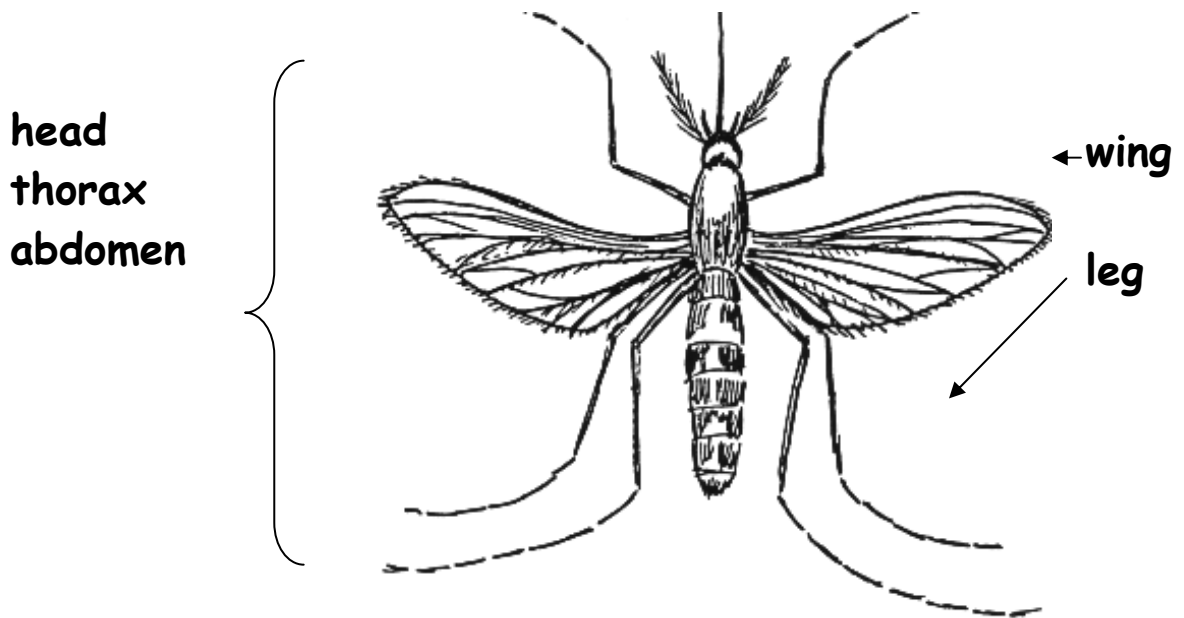
You will see many people in Africa. There are about 911 million people that live in 54 countries in Africa. You will hear the African people speak about 2,000 languages.

You will see many big things in Africa. The continent of Africa has the biggest desert in the world. It is called the Sahara Desert. Africa has the biggest river in the world. It is the Nile River. Africa has the biggest mammal on earth. It is the elephant. Africa has the tallest animal on earth. It is the giraffe. Africa has a very big mountain called Mount Kilimanjaro in the country of Tanzania.

Africa is a continent with many countries, people, languages, animals and big things to see.

Name \_\_\_\_\_

## Mosquitoes



1. Mosquitoes are insects.
2. Mosquitoes buzz.
3. Mosquitoes live near water.
4. Mosquitoes have six legs.
5. Mosquitoes have two wings.
6. Mosquitoes have two antennae.
7. Mosquitoes have three body parts.
8. Mosquitoes have a head, a thorax and an abdomen.
9. Mosquitoes have a proboscis.
10. Mosquitoes drink plant juices.

11. Female mosquitoes suck blood from animals and people.
12. The Anopheles mosquitoes may bite people and make them sick. They can give people malaria.



Name: \_\_\_\_\_

**My notes on mosquitoes:**

1. color \_\_\_\_\_

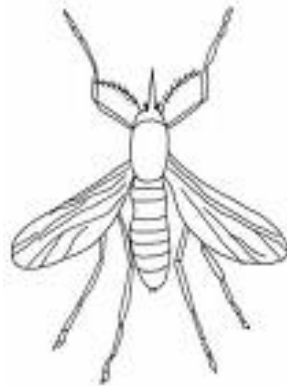
2. number of legs \_\_\_\_\_

3. number of body parts \_\_\_\_\_

4. food it eats \_\_\_\_\_

5. where it lives \_\_\_\_\_

Helpful \_\_\_\_\_ Harmful \_\_\_\_\_



## Imaginary Flight to Africa

### Preparation:

- Arrange student chairs in a hallway to resemble the seating of an airplane.
- Place an adult chair in front of the chairs for the pilot.
- Download passport [www.abcteach.com/countries/passport.htm](http://www.abcteach.com/countries/passport.htm)
- Make, "Welcome to Casablanca" and "Welcome to Nairobi" posters

### Procedure:

Early in the school day tell the children that they will be taking a pretend trip to a far away continent called Africa. It is a huge continent with many animals and people who speak different languages. How lucky they are to be going to such a wonderful and exciting place! Locate Africa on a map or globe. Before they leave their country they will need a special little book called a passport to be able to "get into" Africa. At this point have the children write their names on the prepared passport, pack their pretend luggage and walk to the airplane.

Students take their seats and the flight attendant (teacher) asks them to put on their pretend seat belts and to put all of their bags under their seats. Then the captain (teacher) takes a pretend microphone and welcomes the passengers aboard. He/she tells the passengers that the plane is leaving New York City and will be flying across the **big** Atlantic Ocean to the continent of Africa. It will take 10 hours to get to a city called Casablanca. Passengers are invited to relax and enjoy the **long** flight.

To help the students understand the great distance between the two continents the teacher will serve three meals on the plane with some "down time" in between. The captain tells the students it is now 9 AM and the flight attendant will be serving breakfast. Pass out the pretend trays of food, allow students time to eat and collect the trays. The captain invites the students to look out and see the clouds and the blue water of the Atlantic Ocean. Teacher then reads a short story to students to "pass the time". Repeat this procedure for lunch and dinner.

The captain then says that we have been on the airplane for ten hours. Flight attendants need to "prepare for arrival". Seat belts are fastened and the pretend plane lands in Casablanca Morocco. The captain tells passengers that the local time is twelve o'clock (midnight) and that the temperature is 70 degrees. Students leave the plane and have their passports stamped

before entering the classroom. Upon entering the classroom there will be a sign saying "Welcome to Casablana". Children are then invited to rest (as it is midnight). Teacher can then read a story such as *Welcome to Morocco* by Deborah Fordyce. At this point conclude this part of journey.

Either later in the day or the next day, announce to the children that they are going to have the opportunity to fly to another wonderful country in Africa called Kenya. (Locate Kenya on the map or globe). They are going to fly all away across the continent of Africa to get to Kenya. What do they think they will see? Write the responses on chart paper. Children will then show their passports as they board the pretend airplane. Seat belts are again fastened and the captain welcomes them on board. It will be a four hour flight to Jomo Kenyatta International Airport in Nairobi Kenya. A pretend meal is served. Teacher then reads the Africa Fact sheet that was downloaded from the website as the plane flies over the various landforms above the continent of Africa. Another meal is served. Captain tells flight attendant to prepare for landing. Local time is +7 hours from New York. Temperature is 70 degrees (F). Instruct the students to look down and see the big game camp of animals before landing in the city of Nairobi. It looks almost like the zoo at home! Children leave the plane and have their passports stamped to enter the country of Kenya. They enter their classroom and see a sign "Welcome to Nairobi". At the airport the people they see have black skin and are speaking many different languages. There are many men at the airport, but not many women. They are wearing brightly colored robes and have come from many different countries in Africa. Leaving the airport the children see the big city of Nairobi. It is a dusty city and they see people walking to work wearing flip flops and light colored clothing. Everyone has black skin. The women are wearing long skirts and blouses and the men are wearing pants and short sleeved shirts. Next the students are going to get into a jeep and drive for four hours along a dusty road into the "bush". It is the rainy season (April) and the grass is long and green and there are many Acacia trees. The jeep passes little homes called huts that are made out of cow dung, sticks and grass. There is a small opening to enter the hut, but no doors or windows. The people have very black skin and are smiling and waving at us. They are wearing colorful robes of blue and red. They are also wearing colorful beads. Everyone is happy that it is raining to help the plants and animals, but they are sad because it means that they are many mosquitoes. The people know that some mosquitoes in

Africa carry a disease called malaria. They do not want the mosquitoes to bite them and make them sick.

What could be done to help these African people? Take responses from children.

Wouldn't it be wonderful if we could buy nets for the people to sleep under to keep the mosquitoes away? How much do they cost? How could they raise this money?

Say good-bye to the people of Africa and promise them that we will help save them from the mosquitoes by buying nets for them.