

Introduction to Insects for Kids

External Anatomy of Insects and Identification of Species

- Using crickets is a great way to get started. Catch some outside or purchase a few from the local pet store.
- Have the students fill out a worksheet like the one seen below.

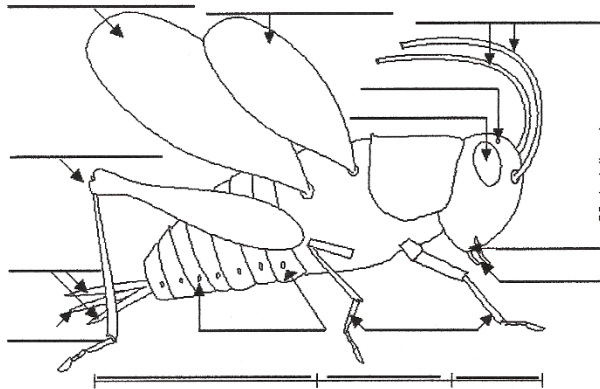
Answers

EnchantedLearning.com

Cricket Info/Printout
Insect Printouts

Label the Cricket Anatomy Diagram

Read the definitions below, then label the cricket anatomy diagram.



abdomen - the segmented tail area of a cricket, which contains the heart, reproductive organs, and most of the digestive system
antennae - like all insects, crickets have 2 segmented antennae that sense touch and odors
cerci - a pair of sensory organs located at the rear of the abdomen (the singular of cerci is cercus) - larger in males

jumping legs - the long, hindmost pair of the cricket's six legs
mouth - located on the head near the palps
ovipositor - a reproductive organ located at rear of the female's abdomen (between cerci)
palps - long, segmented mouth parts (under the jaws) that grasp the food
simple eye - small, primitive organs that

<http://www.enchantedlearning.com/subjects/insects/orthoptera/labelcricket/>

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compound eye - crickets have 2 faceted eyes made up of many hexagonal lenses
fore wing - the pair of wings closest to the head
head - the head is at the front end of the cricket's body and is the location of the brain, the two compound eyes, the mouth parts, and the points of attachment of its two antennae.
hind wing - the pair of wings farthest from the head

distinguish dark from light
spiracles - a series of holes located along both sides of the abdomen; they are used for breathing
thorax - the middle area of the cricket's body - where the legs and wings are attached
walking legs - the four, short front legs that are used for walking

- Then walk them through this series of questions. You can use various insects' pictures or specimens to get different answers. Sample key included at end of document.
1. Do insects have shells? _____
 2. Insects do not have a backbone so they are referred to as _____.
 3. Mature insects have 3 body segments. What are they called?

 4. First check to see if the insect specimen has legs. YES or NO
 - a. If the insect does not have legs, does it look like a worm? YES or NO Check for species specific characteristics such as a breathing tube, bristles, or a "tail."
IDENTIFICATION _____
 - b. If the insect does have legs, how many are there? _____
 - c. Some insects have spines on their legs.
 - d. Most mature insects have how many pairs of jointed legs. _____
 5. Next check to see if the legged insect has wings. YES or NO
 - a. If the insect has wings, are they leathery (true bugs) or hard (beetles)? _____
 - b. How many wings are there? _____
 - c. Look for species specific characteristics such as color, body shape, or grasping legs.
IDENTIFICATION _____
 - d. How an insect carries its wings is also a useful thing to note.
 6. Next check to see if the non-winged insect has any "tails." YES or NO
 - a. If there are any "tails" count them. _____
 - b. Look for species specific characteristics such as type of mouth parts, overall size, presence of a case, or gills. IDENTIFICATION _____
 7. Continue your observations. Locate the eyes of the insect.
 8. Locate and describe antennae if they are present, e.g., number and shape.

 9. Do insects have a nose? YES or NO Do they have ears? YES or NO
 10. Does the insect have mouth parts? YES or NO
 11. If yes, what kind are they? _____
 12. Only mature females have this structure. _____ Does the specimen have one? YES or NO

Insect Life Cycles

- Incomplete Metamorphosis: Using crickets as an example, discuss with students what it means to develop by incomplete metamorphosis.
- Milkweed bug larvae can be purchased and are easy to use to show all stages of complete metamorphosis. Any small container, or even a plastic bag, will do. Just make sure to use a very small pin to make ventilation holes. Supply water in a small container with a wick (paper or cotton) and raw shelled sunflower seeds. Have students keep a daily journal. In about a month the larvae will mature into adults.

More resources

[Welcome - Lesson Hive](#)

This website is a collection of materials related to insects and arthropods that are geared toward K-12 students, and that have been reviewed and organized for ease of access.

Key to insect anatomy questions

1. Do insects have shells? NO
2. Insects do not have a backbone so they are referred to as invertebrates.
3. Mature insects have 3 body segments. What are they called? head
thorax abdomen
4. First check to see if the insect specimen has legs. YES or NO (adults do, immatures may not)
 - a. If the insect does not have legs, does it look like a worm? YES or NO Check for species specific characteristics such as a breathing tube, bristles, or a "tail."
IDENTIFICATION: many insects immature forms do not have legs, if so, you would stop at this point and identify based upon immature specific characteristics
 - b. If the insect does have legs, how many are there? 6 or 3 pairs
 - c. Some insects have spines on their legs.
 - d. Most mature insects have how many pairs of jointed legs. 3
5. Next check to see if the legged insect has wings. YES or NO
 - a. If the insect has wings are they leathery (true bugs) or hard (beetles)?
 - b. How many wings are there? 4 or 2 pairs
 - c. Look for species specific characteristics such as color, body shape, or grasping legs.
IDENTIFICATION: only a few groups of insects lack wings, for those that do have wings the type and number are key to figuring out which group they belong to
 - d. How an insect carries its wings is also a useful thing to note.
6. Next check to see if the non-winged insect has any "tails." YES or NO
 - a. If there are any "tails" count them.
 - b. Look for species specific characteristics such as type of mouth parts, overall size, presence of a case, or gills. IDENTIFICATION: these extra structures are useful in some groups to identify them quickly or sort them out from closely related groups
7. Continue your observations. Locate the eyes of the insect.
8. Locate and describe antennae if they are present, e.g., number and shape.
9. Do insects have a nose? YES or **NO** Do they have ears? YES or **NO**
10. Does the insect have mouth parts? YES or NO (most do but not all)
11. If yes, what kind are they? (various)
12. Only mature females have this structure. ovipositor Does the specimen have one? YES or NO