

UNIDENTIFIED (FLYING?) ARTHROPODS

Students identify the features that distinguish the five different classes of arthropods and observe arthropod pictures or specimens to determine the class to which they belong.

ARIZONA SCIENCE STANDARDS

SC04-S4C1-01,
SC03-S4C4-01&034SC-F4,
SC04-S4C1-02

OBJECTIVES

Students should:

- Identify the characteristics of the five classes of arthropods.
- Classify unknown arthropods based on their features.

MATERIALS

- copy of *Student Handout - Unidentified (Flying?) Arthropods Pages 1 and 2* for each student
- pictures or specimens of arthropods from all five classes
- magnifying glasses (optional)

VOCABULARY

Arachnid
Centipede
Crustacean
Insect
Millipede

BACKGROUND

Not just flying, but walking, running, swimming, and jumping, arthropods are an extremely diverse group of animals. Although all arthropods have jointed legs, an exoskeleton, and segmented bodies, their diversity lends to further classification. Scientists use arthropod features such as presence of wings, number of legs and how they are attached, number of body parts, and number of antennae to classify them. There are five classes in the phylum Arthropoda:

1. Arachnida (spiders, scorpions, mites, ticks)



2. Crustacea (crayfish, crabs, shrimp, sowbugs)



3. Diplopoda (millipedes)



4. Chilopoda (centipedes)



5. Insecta (insects)



See the Key to Arthropod Classification in the first page of the student handouts to understand what features distinguish these groups. By setting up stations in your classroom that show photos or specimens of each of these classes, students can use this simple key to determine to which class of arthropod each belongs.

GETTING READY

Make a copy of pages 1 and 2 of *Student Handout - Unidentified (Flying?) Arthropods* for each student. Assemble specimens or pictures of arthropods from all five classes. (Kid's nature magazines like "National Geographic World" and "Your Big Backyard" are good sources of pictures. Check the resource list, page 2, for other sources as well.) Set up numbered stations around the room that display the specimens or pictures of each arthropod class.

DOING THE ACTIVITY

SETTING THE STAGE

- 1) Ask the students to recall what features make an arthropod an arthropod. (All arthropods have segmented bodies and jointed legs.)
- 2) Have them give some examples of arthropods they read about in the previous activity. Ask, "Are all these arthropods the same?" (no) "How could you tell the insects from the other arthropods?" (They have six legs.)
- 3) Explain that there are five groups or classes of arthropods, and that insects are one of them. Tell them that they will be learning what the five classes are and how to classify an unknown arthropod.

ARTHROPOD CLASSIFICATION

- 1) Pass out a copy of page 1 of *Student Handout - Unidentified (Flying?) Arthropods* to each student.
- 2) Read through the descriptions of each class with the students, defining terms. As a group, have them identify which picture is an insect. Have them draw a line from the insect picture to the insect part of the classification key, then write the word "insects" on the line below the picture. Next to "insects" write the name (cicada) from the list at the bottom of the key.
- 3) Have them repeat the process for the other pictures individually. When they have finished, go over their answers as a group. Tell them they will need this key for the next part of the activity.
- 4) Hand out a copy page 2 of *Student Handout - Unidentified (Flying?) Arthropods* to each student. Show them the different stations. Divide them into groups and direct them to the stations.
- 4) Have them fill out the worksheet at each station. Remind them to look carefully at features like wings, legs and body segments as listed in the key.
- 5) Discuss the answers as a group.

STUDENT HANDOUT - UNIDENTIFIED (FLYING?) ARTHROPODS PAGE 1

Key to Arthropod Classification

ARACHNIDS

- no wings
- no antennae
- 1 or 2 body segments
- 8 legs

CRUSTACEANS

- no wings
- 2 pairs of antennae
- 2 body segments
- 10 or more legs

MILLIPEDES

- no wings
- 1 pair of antennae
- many body segments
- 2 pairs of legs on each body segment
- body round

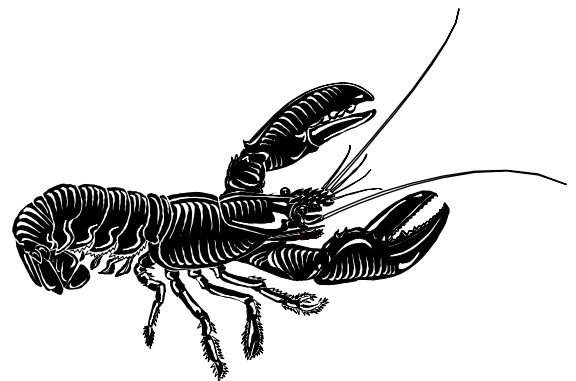
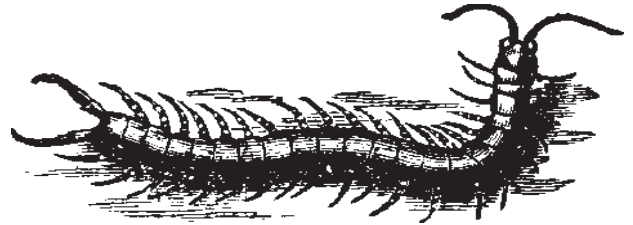
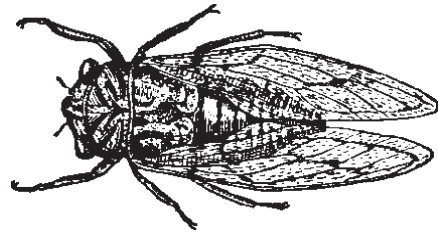
CENTIPEDES

- no wings
- 1 pair of antennae
- many body segments
- one pair of legs on each body segment
- body flat

INSECTS

- 1 or 2 pairs of wings (sometimes none)
- 1 pair of antennae
- 3 body segments (head, thorax, abdomen)
- 3 pairs of legs

Draw a line from the animal's picture to its class. Write the name of the class on the line under the picture.



For insects, arachnids, and crustaceans, choose a name from the list below and write it on the line next to the class.

CICADA

CRAYFISH

SPIDER

STUDENT HANDOUT - UNIDENTIFIED (FLYING?) ARTHROPODS PAGE 2

Answer the questions at each station to figure out what kind of arthropod is there.

STATION 1

Does it have wings?_____ If so, how many?_____

Number of antennae:_____ Number of legs:_____

Number of body parts or segments (if more than three write "many"):_____

To which arthropod class does it belong?_____

STATION 2

Does it have wings?_____ If so, how many?_____

Number of antennae:_____ Number of legs:_____

Number of body parts or segments (if more than three write "many"):_____

To which arthropod class does it belong?_____

STATION 3

Does it have wings?_____ If so, how many?_____

Number of antennae:_____ Number of legs:_____

Number of body parts or segments (if more than three write "many"):_____

To which arthropod class does it belong?_____

STATION 4

Does it have wings?_____ If so, how many?_____

Number of antennae:_____ Number of legs:_____

Number of body parts or segments (if more than three write "many"):_____

To which arthropod class does it belong?_____

STATION 5

Does it have wings?_____ If so, how many?_____

Number of antennae:_____ Number of legs:_____

Number of body parts or segments (if more than three write "many"):_____

To which arthropod class does it belong?_____