**How Are Arthropods Classified?**

**I. Introduction**

In this investigation you will compare and contrast characteristics among the five classes of arthropods. You will also classify various species of arthropods into one of the five classes based on examination of anatomical characteristics.

**II. Procedure**

1. Start the activity by going to the following website :

<http://glencoe.mheducation.com/sites/dl/free/0078802849/383951/BL_18.html> .

NOTE : There a total of nine arthropods available for you to classify in this Investigation. Four

of the nine specimens will be randomly assigned by the computer to the specimen containers.

To get a new set of four specimens, click the “Reset” button at any time. To complete the

Table for this Investigation, you will need to identify any four of the nine possible specimens.

2. Click “More Information” to read general information about arthropods.

3. Select a specimen to examine by clicking one of the specimen jars near the dissecting tray.

The selected specimen will appear on the dissecting tray. NOTE : Arthropods on the

dissecting tray are not necessarily drawn to scale.

4. Move the mouse pointer over the specimen and watch for highlights. If an area highlights as

the mouse passes over it, click to see a detailed view of that area.

5. As you examine the specimen on the tray, open the Table and collect information about the

specimen’s physical characteristics.

6. Click the Arthropod Reference Guide to get information about each of the five classes of

arthropods. The reference guide will open to the Table of Contents page.

7. Use the Table of Contents choices and the forward & back pointers to move between pages of

the Reference Guide. There are five sections in the guide, one for each class. Each section

has two pages. The first page contains text describing the characteristics of the selected class.

The second page shows an illustration of a typical specimen from the selected class. Move

the pointer over the illustration to see labels and descriptions of the different parts of the

arthropod.

8. Based on your examination of the selected specimen and your review of the Arthropod

Reference Guide, decide which class the selected specimen belongs to. Select the “Class”

button that corresponds to your guess, and then click “Check”.

9. Repeat the procedure for each of the four specimens. Click “Reset” to get four new

specimens.

**III. Data**

1. Record your data in Table below.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Body**  **Sections**  **(1, 2, 3,**  **Or >3)** | **Walking**  **Legs**  **(6, 8,**  **Or >8)** | **Other**  **Appendages?** | **Antennae**  **(0, 2,**  **Or 4)** | **Claws**  **Present?** | **Jaws**  **Present?** | **Class** | **Common**  **Name** |
| Specimen 1 |  |  |  |  |  |  |  |  |
| Specimen 2 |  |  |  |  |  |  |  |  |
| Specimen 3 |  |  |  |  |  |  |  |  |
| Specimen 4 |  |  |  |  |  |  |  |  |

**IV. Analysis & Conclusions**

**1. Many species of arachnids are predators, but have no teeth or jaws. How do they obtain**

**nutrients from their prey?**

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**2. Arthropods are the most diverse group of animals. Describe some characteristics of**

**arthropods that may have contributed to their great evolutionary success.**

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**3. What are some advantages and disadvantages of having an exoskeleton?**

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**4. Which of the five classes of arthropods is the most diverse? Explain.**

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**5. For each of the following characteristics, indicate whether the trait is common to**

**Phylum Arthropoda or specific to certain classes of arthropods: wings, chewing**

**mouthparts, jointed appendages, number of legs, segmented bodies, type of respiratory**

**structure, exoskeleton.**

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