Classification of Living Things

Summary

In this lesson, students will make observations on structural differences in several Orders of insects. Using their observations, students will then make a dichotomous key and classify insects to the Order level.

Time Frame

2 class periods of 90 minutes each

Group Size

Small Groups

Life Skills

Thinking & Reasoning

Materials

Insect collecting container for each student (small mason jars, baby food jars)
Nets for collecting insects (optional: it is fairly easy to collect insects without nets)
Jewelers loupe or magnifying glass
Colored pencils
Styrofoam cups
Pins

Background for Teachers

Animals belonging to the Class Insecta have six segmented legs, two sets of wings, compound eyes, bodies segmented in three sections (head, thorax, abdomen) and antenna. The following websites are useful in showing the different parts of an insect.
http://www.myschoolhouse.com/courses/O/1/66.asp
http://bijlmakers.com/entomology/bodypart.htm
Insects are classified into Orders be structural differences. For example, preying mantis (Order: Mantodea) have large grasping front legs typically not seen in other orders. The following website is useful in determining unique characteristics in several Insect Orders.
http://www.earthlife.net/insects/orders.html
The following website is useful for methodologies on making an insect collection. This website also has a lot of basic insect information.
http://extension.entm.purdue.edu/401Book/default.php?page=home

Student Prior Knowledge

Prior to this lesson, students should already know the six living kingdoms and what types of organisms belong to this kingdom. Students should already know what a dichotomous key is and how to follow the key.

Intended Learning Outcomes

1. Use Science Process and Thinking Skills
    a. Observe simple objects, patterns, and events, and report their observations.
    e. Use classification systems.

4. Communicate Effectively Using Science Language and Reasoning
a. Record data accurately when given the appropriate form (e.g., table, graph, chart).

Instructional Procedures

Day 1
Start the lesson by discussing the characteristics that are unique to the Class Insecta. Classes may use the attached power point and discuss unique characteristics of each order, in order to construct their own classification chart.(in power point)
Optional: Take students outside to collect their own insects.
Assign students to collect an insect, kill by placing in the freezer and bring in for the next class period devoted to this lesson.
Day 2
Have students mount their insect on top of Styrofoam cup using a pin.
Have students draw their insect while making careful observations.
Using the chart previously filled out in class, have students identify the order of their insect.
Put students into small groups to allow for the greatest insect order diversity.
While students are in their small groups, have them create a dichotomous key down to insect order.

Assessment Plan

Performance of this lesson will be assessed by students ability in making a dichotomous key.

Bibliography

How to make an awesome insect collection
http://extension.entm.purdue.edu/401Book/default.php?page=home
Insect body parts
http://bijlmakers.com/entomology/bodypart.htm
Insect Orders
http://www.earthlife.net/insects/orders.html
Parts of an insect
http://www.myschoolhouse.com/courses/O/1/66.asp

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