

How to Use a Dichotomous Key

Curriculum Objectives:

Senior 4 Biology

S4B-0-P1 Demonstrate confidence in their ability to carry out investigations.

S4B-0-S1 Use appropriate scientific problem-solving or inquiry strategies when answering a question or solving a problem.

S4B-0-G1 Collaborate with others to achieve group goals and responsibilities.

Unit 5 – Organizing Diversity

3. Describe the dynamic nature of classification.

Include: different systems, current debates

4. Describe types of evidence used to classify organisms and determine evolutionary relationships.

Examples: fossil record, DNA analysis, biochemistry, embryology, morphology...

Introduction and Teacher Modeling:

Prior to this activity, students should have learned the meaning and purpose of classification of organisms. They should be aware of the classification system (Domain, Kingdom, Phylum, Class, Order, Family, Genus, Species), and understand it. Review this if necessary. In this lesson, the students will learn what a dichotomous key is and how to use one to identify between different families of shark. For this lesson, it is necessary to learn some of the basic morphology of sharks. Each student will have the Student Handout (Part A and B) that follows, and you should make an overhead of the shark diagram to go through the features of the shark with them before they begin to try to use the key.

After the features of the shark have been explained and understood, it would be a good idea to go through the first two or three shark diagrams with the students to make sure they understand how to use the key.

Once the students have applied this skill, they will answer questions related to it and will then create their own dichotomous keys for given organisms. For the next lesson the students will be asked to collect snails from a local pond, river, lake, etc, so that we can identify the different species in the classroom with a dichotomous key. *Note: In order to be able to carry out the second part of this activity, the weather must be accommodating. If not, it may be wise to collect a variety of snail shells for the students to use during this investigation.

Safety Concerns:

The portion of this activity that takes place in class had no relevant safety issues, although you may want to remind students to be careful when collecting snails for the investigation portion of the lesson (that will take place on their own time).

References

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