SCIENCE NORTH SCIENCE NORD
SUDBURY, ONTARIO, CANADA

Classifying Aquatic Diversity **Grade 6**

Create a Classification Key - Post

Assessment	activity
Cross-curricular	Arts

Big Ideas
50 minutes

Biodiversity includes diversity of individuals, species, and ecosystems.

Classification of the components within a diverse system is a beginning point for understanding the interrelationships among the components.

Specific Expectations
1. Identify and describe the distinguishing characteristics of different groups of plants and animals, and use these characteristics to further classify various kinds of plants and animals (3.1);
2. Investigate the organisms found in a specific habitat and classify them according to a classification system (2.2);
3. Use scientific inquiry/research skills to compare the characteristics of organisms within the plant or animal kingdoms (2.3);
4. Use appropriate science and technology vocabulary, including classification, biodiversity, natural community, interrelationships, vertebrate, invertebrate, stability, characteristics, and organism, in oral and written communication (2.5).

Description
Students will group like objects according to their own hierarchy of classification and make their own dichotomous key.

Materials
The students will need a variety (8-10) of different candy/chocolates, sweets. The teacher may choose to provide the students with the candy or ask that each student bring in one or two types of candy to share with the classroom. Teacher may chose to use other materials like screws, nails, washers, bolts, nuts… instead of candy. The students should have access to a ruler and paper for creating their chart.
*Example of a classification key (see attached document).

Introduction

1. Students should be familiar with the accepted scientific classification hierarchy as follows: Domain, Kingdom, Phylum, Class, Order, Family, Genus, and Species. The students should by now understand that living organisms are put into these categories based on their physical characteristics (and DNA).
2. Students should be able to define biodiversity.

Action

1. Groups of 2-4 students are given a collection of candies/chocolates/sweets, 8-10 different types.
2. The students will then create a classification hierarchy for each "species" of candy, using characteristics of the candy.
   EXAMPLE: Students may choose to divide the candy into two DOMAINS, Chocolate and Candy.
3. Then they might divide the Chocolate into PHYLLUMS such as "Dark Chocolate" or "Milk Chocolate". Maybe then the "Milk Chocolate" Phylum is divided into CLASSES like "Candy coated" or "Caramel". Then the "Candy coated" is further divided into a FAMILY like "Round" or "Oval" (shaped). Then the Family is divided into GENUS such as by size "< 1cm" or "> 1cm". Then finally SPECIES "Reece's Pieces" or "Smarties". Students can even give the candies new names and invent a Latin version of the candies if they chose. Try and abide by normal taxonomic grammar rules.
4. Students should be able make a chart (or key) of their classification (like the one used in the Classifying Aquatic Diversity program at Science North (See the example attached).

Consolidation/Extension

Let each group present their key to the class and discuss why they grouped certain candies together while others may have grouped them differently. There is no one way to group them in this case and students will see that taxonomist have their work cut out for them when they try and group living things together and justify their reasons to the scientific community.
Students should now have a thorough understanding of the accepted classification hierarchy of Earth's biodiversity of species.