



Fashion A Phyto

Southeast Phytoplankton Monitoring Network (SEPMN)

Grades:
6th-College

Goal:
To understand the structure and function of phytoplankton and to learn about binomial taxonomy.

Objectives:

1. Students will learn the structure and function of phytoplankton by constructing a new species of phytoplankton with provided art supplies.
2. Students will classify their new species according to the binomial system of taxonomy.

Science Standards:
Observation, Biological Classification, Biological Adaptation, Communication, Creation of Scientific Models, Scientific Inquiry, Cell Structure/Function, Photosynthesis, Scientific History

Materials:

- Set of fashion cards
- English to Latin Dictionary (Small list included with lesson plan; a dictionary can be obtained at local library or book store)
- craft paper ▪ ribbons
- construction paper
- paper plates ▪ tape
- crayons/markers ▪ stapler
- pipe cleaners ▪ clay
- aluminum foil ▪ glue
- white or colored tissue paper
- any other available craft supplies

Background:
Each animal and plant has its own scientific name that is recognized by scientists in America, Europe, or anywhere else in the world. This binomial system of taxonomy dates back to the 1750s, when Swedish naturalist Carl von

Linne (Latinized to Carolus Linneas) adopted Latin, the scholarly language of the day, to describe organisms.

Each organism is assigned a Genus name (capitalized) and a species name (lower case). Both names are usually italicized. Organisms with the same genus names are closely related (such as *Canis* for all dogs), while those with similar species names may share common features (such as shape or color, as in *rubrum* for red) and generally can interbreed only among themselves. The species name is usually an adjective that describes something about the organism, the person who discovered the original, or where the organism was first located. For example, the scientific name for humans is *Homo sapiens* (Genus *Homo* = man, species *sapiens* = thinking). The literal Latin translation for *Homo sapiens* is thinking man.

By looking for the root meaning of the Latin names, students may deduce the characteristics of an organism. In this activity, by using Latin words to describe the characteristics of their “invented organisms”, students can name the new species they create.

Students must follow the basics rules of taxonomy (the science of naming organisms) when naming their new species:

- No two different species can have the same combination of genus and specific names.
- No species is given more than one combination of genus and specific name.
- Genus name is always capitalized & italicized or underlined.
- Specific species name is not capitalized, but is always italicized or underlined.

Procedures:

1. Explain to the students that they will construct their own new species of phytoplankton using the art supplies provided.
2. Hand out four fashion cards to each student/group of students.
3. When handing out cards, make sure not to give two contradicting cards (example: centric vs. pinnate).
4. Each student/group will create a phytoplankton using the art supplies based on what cards they have received.
5. Each card has a definition and an example of the structure. These are to be used as guides to construct their phytoplankton.
6. Once they have created their new species, instruct the students to use an English-Latin dictionary to come up with a new name for their organism. Names can be based on:
 - a. people
 - b. region/location
 - c. shape/size/color
 - d. similarity to other species
 - e. other defining characteristics
7. The goal for the student is to be creative and learn the different and sometimes unique characteristics of phytoplankton. This will help them identify the phytoplankton they see under the microscope.
8. Each student/group should present their phytoplankton to the class and explain the name, characteristics, and possible purposes of the organism's structures to the class. This will allow students to learn various structures and Latin names while enjoying what their classmates have created.

Discussion:

1. What are phytoplankton?
2. Why are phytoplankton important?
3. What is it about phytoplankton that make each one unique?
4. Why do scientists use scientific names?

5. What do the two parts of the scientific name represent and how are they written?
6. Who actually creates the scientific name of a new organism?

Conclusions:

Explain what phytoplankton are and why they are important. Describe how a new species is named according to the binomial system of taxonomy.

