

CHAPTER

6

Classifying Cerealites

Students are presented with the problem of creating a classification system for 10 types of Cerealites (actually pieces of cereal). They must include at least three levels of classification and present their system on a poster. To solve this problem, students must apply the concepts they have learned about shared characteristics and classification systems.

◆ Expected Outcome

Students' systems will vary. However, students should base their classification systems on several characteristics of the cereal such as color, shape, size, flake versus not flake, and so on. Each characteristic should be used to classify a larger group of cereal pieces into two or more smaller groups. For example, students may choose to divide the group of all cereal pieces into two smaller groups of yellow pieces and brown pieces based on the characteristic of color. Then they may choose to divide the group of yellow pieces into two smaller groups of round yellow pieces and square yellow pieces based on the characteristic of shape. Students should keep subdividing their groups until each piece of cereal is by itself in its own group. Students' posters should clearly show their system's levels of classification and the shared characteristics of each group.

◆ Content Assessed

The Performance Assessment tests students' understanding of shared characteristics and classification systems.

◆ Skills Assessed

observing, applying concepts, classifying

◆ Materials

- ◆ Give each student 10 different types of cereal pieces. Include a wide variety of shapes, colors, sizes, and textures.
- ◆ Provide posterboard, glue, colored pencils or markers, and any other materials students will need to make their posters.

◆ Advance Preparation

Encourage students to bring small plastic bags full of their favorite cereal to class on the day of the activity.

◆ Time

40 minutes

◆ Monitoring the Task

- ◆ Have several visual representations of classification systems on hand for students to look at and to use for ideas. See Figure 4 on page 187 of the Student Edition for an example.
- ◆ Suggest that students glue their cereal pieces onto their posters so that people looking at the poster will be able to see what the "Cerealites" look like.
- ◆ To save time, you may want to have students diagram their systems on sheets of notebook paper rather than having them create posters.
- ◆ As an extension, suggest that students create taxonomic keys for their classification systems.

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In assessing students' performance, use the following rubric.

	4	3	2	1
Developing a Classification System	Student's system is clearly based on shared characteristics. System has at least three levels of classification. Larger, more general groups are divided into smaller, more specific groups.	Student's system is based on shared characteristics. System has three levels of classification. Larger, more general groups are divided into smaller, more specific groups.	Student's system is only partially based on shared characteristics. System has only two levels of classification. Larger, more general groups are not always divided into smaller, more specific groups.	Student's system is not based on shared characteristics. System has two or fewer levels of classification. Student fails to divide larger, more general groups into smaller, more specific groups.
Presenting the Classification System	Student's poster makes the classification system easy to understand. The shared characteristics of each group in each level are clearly labeled. The progression from general to specific is indicated.	Student's poster makes the classification system clear. The shared characteristics of each group in each level are labeled. The progression from general to specific is indicated.	Student's poster describes the classification system. The shared characteristics of each group in each level are mostly labeled. The progression from general to specific is indicated.	Student's poster makes the classification system difficult to understand. The shared characteristics of each group in each level are sometimes labeled. The progression from general to specific is not indicated.
Concept Understanding	Student demonstrates a mastery of the concepts of shared characteristics and classification systems.	Student demonstrates a good understanding of the concepts of shared characteristics and classification systems.	Student demonstrates partial understanding of the concepts of shared characteristics and classification systems.	Student demonstrates minimal understanding of the concepts of shared characteristics and classification systems.

CHAPTER 6**PERFORMANCE ASSESSMENT**

Classifying Cerealites

◆ Problem

Suppose that you are both a space explorer and a scientist. You have recently arrived on the planet Cereal. The organisms on this planet are called Cerealites. How can you create a classification system for Cerealites?

◆ Suggested Materials

10 different types of Cerealites
posterboard
glue
colored pencils or markers

◆ Devise a Plan

1. Examine the Cerealites and begin to think of ways in which you could classify them. Notice their similarities and their differences. Do not eat the Cerealites.
2. Decide which characteristics of the Cerealites will be the most important in your system. Use these characteristics to classify your organisms into at least three levels.
3. Make a poster that explains your system of classification. You will probably want to outline your system on a separate sheet of paper before you begin work on your poster.

◆ Analyze and Conclude

After completing your poster, answer the following questions on a separate sheet of paper.

1. What characteristics did you use to classify the Cerealites? Why did you choose these characteristics?
2. Look at the posters of other students in your class. Is there more than one correct way to classify the Cerealites? Explain.
3. Suppose one of your Cerealites suddenly changed from yellow to red. How would this affect your classification system?
4. Like the animals of Earth, Cerealites have also undergone millions of years of evolution. Which types of Cerealites seem to be most closely related? Explain.