

Science 4:5 - Act. 6: Potato Chip Classification

Summary

Students will understand and utilize a simple classification scheme.

Group Size

Small Groups

Materials

- six different types of potato chips selected for differences in observable characteristics (e.g., color, texture, brand name, flavoring)
- paper for recording group keys
- samples of each type of chip in labeled plastic bags
- overhead or chalkboard for initial modeling of procedure

Background for Teachers

This activity can be used at the beginning of the year to introduce the structure and function of a dichotomous key preparatory to asking students to identify Utah plants and animals in the wetlands, forests, and deserts. The word dichotomy means "division into two." A dichotomous key reduces the task of identifying something into a series of questions that are based on physical features. Each set of questions offers opposing answers from which to choose. As you make choices and eliminate others, you will eventually find out the name of the mystery item.

This activity will help students to classify "specimens" according to observable characteristics, prepare a "key" showing their classification system, use their key to identify a specimen, and see the diversity that can be observed in classmates' classification systems.

Intended Learning Outcomes

1. Use a Science Process and Thinking Skills
3. Understand Science Concepts and Principles

Instructional Procedures

Invitation to Learn

Ask students to think of their favorite song (or kind of music). Accept all answers and mention how diverse the kinds might be. Ask, "Does it matter that everyone likes different kinds of music? What makes it different?" (words, melodies, notes used, rhythms, singers). All of these answers are called characteristics. They are ways we identify different types of music. Music can be divided into groups, or classes that show the diversity they contain. Let's try to do the same thing with some food.

Instructional Procedures

Display bags of potato chips and discuss their similarities and differences.

Ask a volunteer to divide the chips into two groups using an observable characteristic (i.e., flavored/unflavored).

Record the results of the first division.

Continue to divide groups of chips, using a different characteristic each time, until only one bag of chips remains in each group. Continue recording results.

Using the class key, identify unknown chips.

Divide class into small groups.

Provide each group with a sample set of chips.

Ask each group to devise and test a dichotomous key that is different from the class key.

Record and share the results.

Eat the chips!

Curriculum Integration

Math/Science - Graph the chips according to student preference. Brainstorm other ways of graphing information using the chips (calories, fat grams, etc.).

Extensions

Repeat the activity with other objects such as candy, shoes, etc.

Share the story of the potato chip from *Mistakes that Worked* by Charlotte Jones.

Classify classroom students by characteristics such as clothing color, hair color, eyes, etc. (Be sensitive to characteristics that will demean or exclude students unfairly.)

Homework & Family Connections

Encourage students to check at home for any potato chips they might have and try to classify with family members.

Choose another group to categorize from someplace in the house (socks, silverware, shoes, junk drawer, books, etc.)

Additional Resources

This activity easily leads into most activities that will classify plants or animals.

Assessment Plan

Have students create a key and record it in their science journals. The key needs to be labeled and correctly follow the procedure for dichotomous keys. Students can explain their example using correct vocabulary and scientific information.

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