

Dried Meat

by Ronda Howlett

Grade level 5

Time required

One to two 50 minute class periods

Materials/Technology

Paper
Pencil
Calculators

Summary

Students will use the math concepts of ratio, proportion, percent and scientific notation to calculate the amount of meat obtained from an animal when prepared using the traditional Native American method of drying meat.

Objectives

The student will:

- 1) use the relationships and applications of ratio, proportion, percent and scientific notation.
- 2) use computational skills and procedures in context of the everyday world, so that the learner perceives them as tools for solving problems.

Montana Math standard addressed

Students demonstrate understanding of and an ability to use numbers and operations.

Assessment

Evaluate students using a teacher made test in which students apply the concepts of ratio, proportion, percent and scientific notation.

Background

Large game such as elk, moose, deer, and antelope are a staple in the diet of many traditional Native American families. Historically, the individual tribes across our nation were resourceful and were able to use what was available to them for survival. Today, the availability of game, combined with the convenience of a wide variety of meats in our local super markets, play a role in how often a Native American family chooses to serve wild game.

Preparing the meat for long term storage has also changed. Commercial or home based processing of these meats offer options to the traditional methods of preservation. Cutting, wrapping and freezing often replaces the traditional drying and smoking as a way to cure the meat.

While drying meat is still a viable option to preserve meat, it tends to be considered more of a delicacy now rather than a necessity. The procedure tends to be long and tedious. The drying process or techniques are not standard, but range from the traditional to the more contemporary. Old time smoke racks made of green willows gave way to the convenient use of bedsprings. Even more contemporary are dehydration units, electric or gas ovens, or microwave ovens.

Procedure

1. As a way to use proportion and percents, describe how the big game animal will shrink if preserved by drying. Ask the students to devise a way to figure out how much meat they will end up with after a 200 lb. (on the hoof) animal is dried. If you don't have the resources to attempt various solutions, you can add some details after the students have had an opportunity to share possible strategies.
2. The additional information needed to solve the problem follows: A typical big game animal will lose 20 percent of its mass after you remove the hooves and hide and strip all the meat from its bones. The drying process will then take away another 40 percent of its mass.
3. Provide students with manipulatives to discover what 20 percent of 200 would be.
4. Once students come up with solutions, continue to challenge them to figure out a proportion, so that they can use it to find out the mass loss for any given weight of an animal.
5. At this grade level, the actual solutions will be approximations. This activity can occur prior to a visit to a museum or a cultural center.
6. As an extension, students can use actual foods to dehydrate and discover proportionate loss in mass.

Further Information

For further information about this activity, contact Ronda Howlett via electronic mail at rhowlett@arlee.k12.mt.us.