

Honey Bunches of Oats

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Grade Level: 4-6

Approximate Length of Activity: 1 hour

Objectives:

1. Help students to identify 3 crops that are used in many of our food products.
2. QPA outcome: All students will demonstrate complex thinking skills in academic and applied situations.
3. Targeted outcome: All students will improve math problem solving skills.

Introduction

Honey Bunches of Oats cereal consists of 3 types of flakes and clusters of baked oats and honey. The 3 kinds of flakes are corn, sparkle flakes (frosted corn flakes) and wheat flakes.

The wheat kernel can be broken down into 3 main parts: bran, the outside kernel which is included in whole wheat flour; germ, the embryo of the kernel which is sometimes put in whole wheat flour; and the endosperm, the part of the kernel used for white flour.

Honey Bunches of Oats contains both whole wheat and wheat flour. The difference in nutrient value is minimal. The whole wheat is made by grinding the whole kernel and using all three parts. Bran, germ, and the endosperm can also be recombined to make whole wheat.

Kansas on average is the largest wheat producing state. Kansas is also number one in flour milling.

There are four main parts to a kernel of corn: the germ, also the living part of the kernel; the endosperm, the seed's source of energy and protein; the pericarp; and the tip cap. The germ is comprised of 25% corn oil. Many corn products have the germ taken out. The oil in the germ increases the spoilage of the product.

Ninety-five percent of the oats grown in the U.S. is used for animal consumption, especially horses. The remaining 5% is used for humans, mainly for breakfast cereal. Unlike most grains, when oat kernels are used for eating, the bran and germ are not removed. The only item not included is the hull, or outside husk. After taking the hull off it is now called a groat. Honey Bunches of Oats uses a rolled oat, this means the groats are steamed and then rolled flat.

Honey Bunches of Oats also uses barley syrup and malted barley flour. In the U.S. barley is the 5th most important cereal crop. When the outer husk of the barley is taken off it is called the pearl barley. This cereal also has sunflower and canola oil, taken from the germs of their seeds.

Materials Needed

- Box of Honey Bunches of Oats, Post product
- Styrofoam cups
- Wheat kernels

- Corn kernels
- Oats
- Compass and rulers

Activity Outline

1. Give each student a cupful of Honey Bunches of Oats
2. Have them separate the flakes and clusters into 4 different groups. Don't tell them what the groups will be called. Just tell them there are 3 different kinds of flakes and a cluster, put those that look the same together. Try not to break them.
3. Show them the grains wheat, corn, and oats. Tell them that each pile's main ingredient consists of one of these three grains. One grain is used twice. Discuss the introduction with your students.
4. Have them try one of each group.
5. Do they taste the same? Discuss.
6. Have them write on a slip of paper which group belongs with which grain. Lay the paper in front of the group.
7. Discuss what they thought. Then tell them the answers.

Math Activity

1. What are the percentages of each kind of flake or cluster in the box?
2. Have each student count the flakes and clusters that are in each group. Only count those flakes that are over $\frac{1}{4}$ inch long (the wheat flakes are smaller).
3. Have them each figure their percentage of flakes and clusters. Use this formula: $\frac{\text{total number of all flakes and clusters}}{\text{total number of groups of flakes (algebra solution)}}$ or $\frac{\text{total number of groups of flakes}}{\text{total number of all flakes and clusters}} = \text{answer} \times 100$. Example: $\frac{17 \text{ flakes}}{60 \text{ total}} = .28 \times 100 = 28\%$
4. Record on the board all of the percentages.
 - a. Wheat flakes Corn flakes Frosted flakes Oat Clusters
5. Find the class average of each group. Add all the percentages up in each group and divide by the number of percentages you add. Example: $25\% + 30\% + 40\% + 25\% = 30\%$
6. Make a class circle graph. Example: 30% of 360 (360 are in a circle) $.30 \times 360 = 108$

Assessment

Each student needs to complete their own circle graph for their own percentages. Use the compass and ruler. Correct arithmetic is 10 points for each group. Showing work is 5 points for each group. Correct graph is 10 points and neatness is 5. Total is 75 points.

Discussion Questions

1. What was your favorite flake?
2. What do you think is the reason for the different percentages of flakes and clusters?

Related Activities

1. Have the students do the same activity with another cereal.
2. Go home and find different products that have the different grains we talked about in their ingredients.