

A Mixed Bag

Background

What happens when you make a mess while you're eating? If you were a horse, you might get fed from a feed bag, a mesh bag that fits on the horse's head so the horse can eat without scattering food everywhere. Some horses knock over their feed buckets or even tear them up while they are eating.

Your mom probably doesn't make you eat from a feed bag when you're messy, but she may try to get you to eat different kinds of food. That's because everyone needs to eat a variety of food in order to stay healthy.

Horses are the same way. Their best source of vitamins is fresh forage—the grass and other plants they eat when they graze in the pasture. Our best source of vitamins is fresh fruits and vegetables.

Horses can't get everything they need from grazing, so their caretakers provide feed—a mixture of several different plants that help make up for what they don't get from the pasture. For protein, the mix contains soybean meal. The rest of the feed is a mixture of grains like oats and corn, mixed especially to provide what is missing from the horse's other food sources. In addition, vitamins and minerals are added to the feed, much like they are added to your breakfast cereal and other foods.

Vitamins are added to food to make up for what we may not be getting from other foods. Since there are few foods that contain iodine, an important mineral, it is added to regular table salt, since that is something most people add to their food. Vitamin D is added to milk, because that is a vitamin not found in many foods.

Horses are also like children because they get stomach aches if they eat too much food at one time.

Science/Health

ACTIVITY ONE: READ AND DISCUSS

1. Read and discuss background.
—Explain that, just like us, horses need a variety of foods to help meet their nutritional needs.

ACTIVITY TWO: FEED BAGS

1. Tell students they will be making feed bags like the ones from which horses eat.
2. Explain that the different foods they will place in the bags represent the nutritional needs of horses.

P.A.S.S.

PRE-KINDERGARTEN

Literacy—3.6

Math—4.1

Small Motor—2.2

Health—3.2

Life Science—3.1

KINDERGARTEN

Small Motor—1.1

Health—1.3

Life Science—2.1

GRADE 1

Health—3.1

Life Science—2.1

GRADE 2

Health—3.1

GRADE 3

Health—3.1

Life Science—2.1

Materials

(for each student)

resealable plastic bag
string or yarn
popcorn
ground peanuts
raisins
small pretzels
puffed wheat

Vocabulary

carbohydrate—any of various compounds of carbon, hydrogen, and oxygen (as sugars, starches, or celluloses) most of which are formed by plants and are a major animal food

forage—food (as pasture) for browsing or grazing animals

mineral—a solid chemical element or compound that occurs naturally in the form of crystals and results from processes not involving living or once-living matter

nutrition—the processes by which an animal or plant takes in and makes use of food substances

protein—any of numerous substances that consist of chains of amino acids, contain the elements carbon, hydrogen, nitrogen, oxygen, and often sulfur, include many compounds (as enzymes and hormones) essential for life, and are supplied by various foods (as meat, milk, eggs, nuts, and beans)

vitamin—any of various substances that are necessary in very small amounts to the nutrition of most animals and some plants

3. Provide each student with a piece of string or yarn and a resealable plastic bag. Students will:
 - Punch holes in the top left and right corners of their plastic bags.
 - String one end of string/yarn through the left hole and tie.
 - String the other end of the string/yarn through the other hole and tie it.
3. Place the different ingredients in separate bowls. Label as follows:
 - popcorn = carbohydrates
 - ground peanuts = protein
 - raisins = vitamins
 - small pretzels = minerals
 - puffed wheat = carbohydrate
4. Place a small bathroom size cup in each bowl.
5. Students will each measure one cup of each ingredient into his/her bag to make a balanced food mixture.
6. Students may eat the snacks in their feed sacks or save them for later.

ACTIVITY THREE: READ CEREAL BOXES

1. Have students bring empty cereal boxes to class to read what vitamins and minerals are added.

Extra Reading

Gibbons, Gail, *Horses*, Holiday House, 2003.

Goble, Paul, *The Girl Who Loved Wild Horses*, Atheneum, 2001.

Isaacs, Anne, and Paul Zelinsky, *Dust Devil*, Schwartz and Wade, 2010.

McCully, Emily, *Wonder Horse: The True Story of the World's Smartest Horse*, Henry Holt & Co., 2010.

Milbourne, Anne, *Horses and Ponies*, Usborne, 2004.

Nelson, Robin, *From Horse to Foal*, Lerner, 2002.

Wolfman, Judy, and David Lorenz Winston, *Life on a Horse Farm*, Lerner, 2002.