



Source: fns.usda.gov/nslp

HEALTHY EATING, SMART LEARNING!

Nevada's School Meal Pattern has a number of benefits. It is designed to improve the health of Nevada's children. It encourages:

- Healthy eating habits
- Increased consumption of fruits, vegetables and whole grains
- Right-sized meal portions

Nevada Academic Content Standards supported by this resource:

Math: 4.MD.A.1
Science: 5-ESS3-1
Language Arts: RI.3.1, RI.3.2, RI.3.4, RI.3.5, RI.3.7, RI.4.1, RI.4.2, RI.4.4, RI.5.1, RI.5.2
Health: 1.5.1, 1.5.4, 5.5.1, 6.5.2, 7.5.2
Social Studies: E11.4.3, H3.4.4

Visit agclassroom.org and agri.nv.gov for more resources.



HEALTHY EATING, SMART LEARNING!

GRAINS



The USDA is an equal opportunity provider.

WHAT ARE GRAINS?

Any food made from wheat, rice, oats, cornmeal, barley, or cereal grain is a grain product. This includes pasta, bread, breakfast cereals, tortillas, and oatmeal. Grains are divided into two groups: whole grains and refined grains. Now all grains on your school lunch tray are whole grain rich!

SELENIUM Selenium is a mineral that protects the cells in your body from being damaged, keeping your immune system healthy. A healthy immune system helps you fight off disease and infection.	
MAGNESIUM Magnesium is a mineral in grains that your body uses to build bones and release energy from muscles.	
IRON Iron is a mineral found in grains that your body needs in order to carry oxygen through your blood.	
FOLIC ACID Folic acid is a B vitamin found in grains that helps your body form red blood cells. In pregnant women, this is especially important in helping her baby to be strong and healthy, and prevents birth defects.	
B VITAMINS The B vitamins found in grains—thiamin, riboflavin, and niacin—play an important role in your metabolism, helping the body to release the energy found in proteins, fats, and carbohydrates. They are also essential for a healthy nervous system. It is the way that your brain in top shape!	
DIETARY FIBER Dietary fiber may help to reduce your cholesterol levels and lower your risk of heart disease, obesity, and type 2 diabetes. Fiber is also important for keeping your bowel function healthy. And it makes you feel full longer, with fewer calories.	

The nutrients in grains are powerful at keeping you strong and healthy:

WHY ARE GRAINS GOOD FOR YOUR BODY?

Eating whole grains as part of a healthy diet may reduce your risk of some chronic (long lasting or recurring) diseases, including heart disease and birth defects in pregnant women. Grains, especially whole grains, include dietary fiber. B vitamins, and minerals that your body needs.

WHAT'S THE BIG DEAL WITH GLUTEN?

You've probably heard or people on TV talk about gluten, or gluten-free foods. But what does that mean, and why is it such a big deal?

Gluten is a protein found in wheat, rye, and barley, which are grains that are found in many foods you eat every day. If you've eaten cereal, pizza, bread, or spaghetti, you've probably eaten gluten.

Some people's bodies have a hard time digesting gluten. Their intestines—a part of your body that helps digest food and absorb nutrients—cannot process gluten, and this causes a reaction in their bodies. This is called celiac disease; it makes them feel very sick, and it keeps them from getting certain important nutrients in their bodies.

However, there are many whole grains that don't contain gluten, including rice, quinoa, and corn, and anyone who has trouble eating gluten should know flour includes the endosperm, bran and germ.

Endosperm is the biggest part of the kernel (about 83%). It is the food source for the sprouting new plant. This part is ground into white flour. Whole-wheat flour includes the endosperm, bran and germ.

Source: Wheat Foods Council

(Source: fns.usda.gov)

VOCABULARY

AMINO ACIDS
Amino acids are special organic molecules used by living organisms to make proteins. The main elements in amino acids are carbon, hydrogen, oxygen, and nitrogen. There are twenty different kinds of amino acids that combine to make proteins in our bodies. Our bodies can actually make some amino acids, but the rest we must get from our food.

COMBINE
A machine used to harvest corn, wheat, and oats. It separates kernels from corn cobs, and grains from husks.

DAILY VALUE
Nutrition specialists know how much of each food group kids and adults should get every day to have a healthy diet. The daily value (DV) tells you how much of this food you should eat to meet these daily goals.

GLUTEN
A protein found in some grains, including wheat and wheat products. Gluten is what makes dough stretchy.

KERNEL
A grain seed; on corn, the kernels are the yellow part that we eat.

YEAST
Microscopic organisms that look like yellow powder, used to make dough rise for bread making.

WHOLE GRAINS
Whole grains contain the entire grain kernel (bran, germ, and endosperm). Whole grain foods include oatmeal, brown rice, bulgur (cracked wheat), quinoa, spelt, millet, and whole-wheat flour. Whole grains are not milled and contain all original grain nutrients.

REFINED GRAINS
Refined grains have been milled, a process that removes the bran and germ, in order to create a finer texture and lengthen shelf life. This process, however, removes dietary fiber, iron, and some B vitamins. Refined products include white flour, white rice, and white bread.

PROTEIN
Proteins are long chains of amino acids. Protein is needed to build, repair and maintain the body.

NUTRIENT
A substance that plants, animals, and people need to live and grow.

HOW MUCH IS ENOUGH?

The USDA says that kids your age, who are getting at least 30 minutes per day of physical activity or exercise, should eat 3 to 5 ounces of grains per day.

How much is an ounce of grains?

- 1 regular slice of whole wheat bread
- 1 whole wheat "mini" bagel
- 5 whole wheat crackers or 2 rye crispbreads
- ½ whole-wheat english muffin
- ½ cup cooked oatmeal or 1 packet instant oatmeal
- 1 whole wheat pancake
- 3 cups of popcorn
- 1 cup of whole grain cereal flakes
- ½ cup cooked brown rice
- ½ cup cooked whole wheat pasta
- 1 whole grain tortilla

For these items, you can find both whole-grain and refined-grain options.

When possible, choose whole grains, which are healthier and contain more nutrients.



LOOK FOR THESE LABELS WHEN SHOPPING!
100% WHOLE WHEAT
100% WHOLE GRAIN
INGREDIENTS: WHOLE GRAIN WHEAT FLOUR



CHALLENGE 1: WHOLE GRAIN UNSCRAMBLE

My color can be either white or brown and I am the most eaten grain in the world.

ICRE _____

A whole grain that is served hot and eaten at breakfast. Some people add milk or fresh fruit to this whole grain.

MEOATAL _____

Helps to maintain intestinal health. Found in fruits, vegetables, nuts and seeds, legumes and whole grains.

RFBEI _____

Contains the entire grain kernel.

HOWEL NRGIA _____

(Source: USDA Supplemental Nutrition Assistance Program)

CHALLENGE 2: LUNCH

You invite your family and three friends for a falafel lunch.

How many attendees will there be at your lunch? _____

Calculate the quantity needed per person:
1 serving = ½ cup falafel mix
(found in the bulk aisle)

How much falafel mix and tahini will you need in total?

_____ Guests x ½ cup = _____
1 serving = 2 whole wheat pita wraps
2 wraps x _____ guests = _____ wraps

You find whole wheat pita bread with 6 pitas in the package at the store. How many packages of pita will you need for your lunch? _____

1 serving = 2 tablespoon (tbsp.) tahini;
2 tablespoons = 1 ounce (oz.)
2 tbsp. x _____ guests = _____ tbsp.

You find a 10 oz. jar of tahini at the store. How many jars of tahini will you need for your lunch? _____



Falafel is a Middle Eastern dish of spiced mashed chickpeas formed into balls and deep-fried and often served with tahini, a sauce made from ground sesame seeds.

Did you get your recommended amount of grains for the day?

Did you have 30 minutes of physical activity? What did you do?



NEVADA CONNECTION: TEFF - NEVADA'S NEWEST GRAIN

Teff is a type of grass, similar to alfalfa, which is an ancient grain. It originated in Ethiopia between 4000 and 1000 BC, and has been a staple grain in African and Asian diets. Increasingly, it is being used as an alternative to wheat and other grains in the U.S.; it is grown in at least 25 states, including Nevada, because of its high nutritional content and the fact that it contains no gluten, making it appealing to those with celiac disease.

According to the University of Nevada Cooperative Extension (UNCE), teff is a high-quality horse hay. The word teff means "lost," because the teff seed is the smallest grain in the world—if you dropped one on the ground, it would be lost.

It may be tiny, but it's powerful. One cup of teff contains a whopping 62% of the recommended daily value of dietary fiber, 82% of iron, 89% of magnesium, and 83% of phosphorus. It's high in protein and contains all eight essential amino acids.

When it is grown as a grain, teff is usually made into flour, which has traditionally been used to produce an Ethiopian bread called injera, or a type of cereal resembling porridge or Cream of Wheat. Its flour can be used in much the same way as other flours. Nevada teff, primarily grown in Churchill County, is becoming very important to the state's economy. It was first grown as an experiment in 2007 by the UNCE as a way to demonstrate how to produce feed for cattle in a drought year, when the state saw very little water. The seeds are very inexpensive to grow and produce a lot of grain quickly. Because of this, production of teff has grown, and about half of the teff sold as grain or flour in the U.S. is now grown in Nevada, providing \$1 million to the state's economy each year.

WORD SEARCH

See if you can find the whole grains hidden in the puzzle below.

E L A C I T I R T D Z D C M H
H N L G R A H A M F C U B N B
M K T U Y E H Y B B F D V R V
P U M I C H V Z R Z S E Y X A
S U H I R W X U O Q M K T Z G
C Q R G L E O N M U V C C O G
Y C R V R L W D A I Y A G Y X
E I T V F O E H T N A R A M A
V N W L R H S T E O G C R N L
M I O B S W I L D A Q G J W P
T T B U C K W H E A T E Q H O
M U R U D V U Q E E K A W Z O



Amaranth
Bromated
Brown
Buckwheat
Cracked
Durum
Entire-wheat
Flour
Graham
Millet
Quinoa
Rice
Sorghum
Teff
Triticale
Wheat
Whole-wheat



Whole Grain Unscramble Key:
1) Rice, 2) Oatmeal, 3) Fiber, 4) Whole Grain

CAREER CORNER

Ian Naccarato, Director of Quality Assurance, Nature's Bakery:

nature's bakery

ENERGY FOR LIFE'S GREAT JOURNEYS™

Q Describe Nature's Bakery and what you do there.

A Nature's Bakery is a company that sells whole-wheat fig bars, with 10 different flavors as well as a seasonal flavor. They're delicious snacks for being on the go. Our corporate office is in Reno, with two manufacturing facilities in Carson City, Nevada, and a new one in St. Louis, Missouri.

As Director of Quality Assurance, I am the food police! All of the ways we make the products and packaging are regulated by guidelines set forth by myself or the US Department of Agriculture. We also have customer-specific guidelines, and a third-party auditor checks our general manufacturing practices. In all aspects, we make sure we are being compliant. In food safety, we write policies that ensure that everyone handling food is being safe—that means proper glove-wearing or offering training about food-contact surfaces. And we look at packaging compliances, making sure all the labels are correct.

Q How did you get into this line of work?

A I started with a college degree in exercise science and a minor in nutrition, and I was thinking of being a nutritionist or a personal trainer. But I found this job, and I saw that it basically meant supplying a healthy product to the whole world, I would get to be part of ensuring it was healthy, and helping to create a cleaner label. I was able to use my nutrition background to contribute to the formulas for the bars, which was very rewarding.

Q What is a typical day like for you?

A It starts very early in the morning. I am typically at the bakery at 6:00 a.m. The first thing I do is go out and check production, and walk through the facility to

see that everything's running well. Once I do the walk-through with my team, we review what happened on the prior day. All the processing of paperwork gets reviewed, and we start verifying quality and certifying the product to be sold to customers. My workday is about 10 hours long, five days a week.

I have given tours for school kids in our facility, for ages 8 to 11, and they were just wowed by the size of the equipment, how big the mixers are, and how our bars are made. They are impressed by the fact that when the ingredients start out, it doesn't look like food, but as they follow it they see it being cooked and packaged. Our technicians do taste tests per batch, and every batch gets sensory tests, for appearance, color, and taste. They have to make sure raspberry tastes like raspberry, blueberry tastes like blueberry.

Q What's your favorite thing about what you do?

A Growth—we've doubled in production size and capabilities every year since I started about three years ago. Right when Nature's Bakery started getting large is when I came on board, and I helped put in procedures to get our bars sold in stores like Walmart and Costco.

Q How would somebody prepare for a career in your industry or profession?

A I think food manufacturing doesn't get a whole lot of discussion, but it's a great industry to be part of because it's an accumulation of every industry. We have sales and marketing, maintenance and engineers, sanitation... But the preparation for quality assurance is a food science background. Some schools offer degrees in that now, so students can learn about ingredients.

