A stylized illustration featuring a green tractor pulling a large orange and yellow hopper filled with green, triangular snacks. In the foreground, a red tractor is partially visible. The background is a textured, brownish-tan surface.

Who
Knows

Who
Grows

“Smackin
Snackin”?

Teaching Materials List:

In order to complete the recipe with your reading you will need the following:

Garbanzo beans, garlic, canola oil, water, salt, peanut butter or tahini paste, and cumin. (Quantities listed in book)

Food processor or blender

Assortment of vegetables and fruits, and lentil or black bean chips

Cup, tablespoon, and teaspoon measures

Paper plates

NOTE: Refrigerate any left over dip Makes 8-10 small servings.

Who Knows Who Grows “Smackin Snackin”?

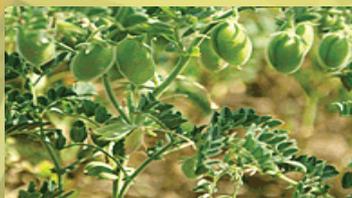
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CHICKPEAS



Northern plains farmers grow several types of pulse crops, one type is chickpeas. Chickpeas are excellent for “smackin snackin”! Chickpeas are

a seed crop grown on plants in northern plains states such as North Dakota and Montana, and also in other western states such as Washington, Idaho, Oregon, and California. Chickpea plants grow about 18 inches tall, and 1 to 2 chickpeas are contained in each pod, depending on the type of chickpea. Chickpeas are planted in the spring. It takes farmers 3 to 7 months of caring for them before they are ready for harvest. Knowing when to harvest is a science for farmers as they must harvest the chickpeas when the color is light cream to light yellow. If the chickpeas grow too long and get darker in color, they will not be accepted by buyers. Once they are harvested from the dried pods and processed, the canned chickpeas can be used in salads, dips, and as a vegetable. Dry chickpeas are also milled for baking flour. Northern plains farmers grow two types of chickpeas; desi or kabuli. Kabuli chickpeas are also called garbanzo beans.



“SMACKIN SNACKIN”

Add

1 can (19 oz) chickpeas, drained
and rinsed, to the food
processor



Chickpeas have long been used for making a dip for vegetables and other healthy snack items. You can find canned chickpeas or garbanzo beans in the supermarket next to other types of canned beans. The Arabic word for chickpeas is hummus.

OIL



Northern plains farmers grow canola, sunflower, and other oil seed crops for cooking oil. That's a whole lot of "smackin snackin"! Farmers harvest canola seeds when they are dry. The seeds are black, round, and small. Seeds are cleaned when they get to the processing plant to remove stems, waste materials, and weeds. The seeds are then crushed into a flake. The flakes are squeezed with large rollers to remove the oil. The oil is washed and spun at high speeds, removing impurities. The impurities are sold to soap manufacturers. Canola oil is one of the healthiest cooking oils; compared to olive, sunflower, and soybean oils it has the lowest level of saturated fat, only 7%.

“SMACKIN SNACKIN”

Add

1 tablespoon of canola oil to the
food processor



Canola flowers are bright yellow. Canola is also called rapeseed.

WATER

Water is one of our basic human needs, along with food and shelter. Water is abundant on the earth, but most of it is salt water. Only about 2.5% of the water on earth is fresh water. Everyone uses water, but often not in ways that they realize. Food is linked to water, even foods that seem dry before they are cooked, like rice and beans, needed water to grow. Much of our clothing is made from cotton plants, which needed water to grow. Because farmers provide food and fiber for us they must use water to grow these crops. One of the food crop types that grows in the northern plains states such as North Dakota and Montana are pulse crops. Pulse crops include dried peas, beans, and lentils. These plant crops require water to grow, not as much as some crops, but they still need water. Farmers work to use as little water as possible to grow healthy crops of food for us to eat and fibers for us to wear. Most farmers use irrigation systems which are like the sprinklers we use on lawns and in gardens, but are much larger since they sprinkle much larger areas. A farm irrigation system gets water from irrigation ditches or from underground wells. The power to run these sprinklers can be very costly, which is part of the cost we pay for our food and fiber. It is important that we all care for our water systems, and farmers know that without clean water they will not have a farming operation.



“SMACKIN SNACKIN”

Add

3 tablespoons of water to the
food processor



Water on farms is also needed for livestock. Wetland areas on farms and ranches provide habitats for birds, insects, and animals.

GARLIC



Northern plains states small farms and home gardeners grow garlic, which adds “smackin snackin” flavor. Garlic is a crop that has been around for a very long time. Egyptians were writing about garlic over 5000 years ago, and several

garlic bulbs were found in King Tut’s tomb in Egypt! Because garlic grows well in cooler climates you can grow it in most northern plains areas. Garlic is closely related to onions, chives, and leeks, and contains protein, iron, and other nutrients which are good for us. Garlic grows under the ground in a form called a bulb. Farmers and gardeners plant single cloves of garlic in either the fall or the spring depending on growing conditions. Each clove produces a new bulb of garlic. In each new bulb there are several new clove sections, which can be replanted to grow more garlic. Two types of garlic that are grown in the northern plains states are softneck and stiffneck. Both are traditionally planted in the spring and harvested in the fall. Garlic in the northern plains states is mainly grown on small farms and by gardeners. You can find locally raised garlic at Farmers Markets and other local food centers. If you want to braid the stems (necks) of the garlic together you will need softneck garlic, as the stiffneck variety is too rigid.

“SMACKIN SNACKIN”

Add

1 clove of minced garlic to the
food processor



Historically garlic has
been used for its
medicinal qualities.

TEAM WORK

Northern plains states small farms and home gardeners grow all kinds of delicious and nutritious food for the world to eat. That's a lot of "smackin snackin" food! Farmers and gardeners in the northern plains states can grow many special crops because the climate is perfect for the plants to grow. All of the food ingredients in your food processor can be raised by northern plains farmers and gardeners. Some food and fiber crops need warmer weather to grow though, so we need to use some fine agriculture crops from other areas in our "smackin snackin" recipe too!

*Peanuts are another legume, but are not considered to be a pulse crop. Even though nuts generally grow on trees, peanuts grow under the ground and are not a nut from a tree! Farmers grow peanuts in the southern United States, and about 10 states, from New Mexico to the Carolinas, grow 95 percent of the peanuts raised in the U.S.

*Tahini is a paste made from the seeds of the sesame plant. Sesame plants are raised in the U.S. by farmers in Texas, Oklahoma, and Kansas. Most of the world's sesame seed production occurs in China, Burma, and India.

*Cumin is a spice which comes from the seed of the plant with the same common name, and is grown mainly in China, Turkey, Uzbekistan, and Iran.

*Salt is harvested from the earth in many different locations. Most U.S. salt is harvested in areas from Detroit to Texas. The salt mined below Detroit is over 1000 feet beneath the city!

“SMACKIN SNACKIN”

Add

1/4 cup lemon juice

1/3 cup peanut butter OR

1/3 cup tahini paste

3/4 teaspoon ground cumin

1/4 teaspoon salt

to the food processor



Blend all ingredients together until well blended and smooth. Congratulations, you have just made the popular dip called hummus!

VEGETABLE CHIPS TO DIP

When it comes to delicious “smackin snackin” dippers the first thing to reach for are vegetables and fruits! All across America farmers grow vegetables and fruits for us to eat. Farmers Markets provide local fresh fruits and vegetables during the summer months. Many people enjoy having vegetable gardens, fruit trees, and berry plants in their own yards. In order to have a well balanced diet, which will provide you with health and nutrition benefits, try to follow the USDA MyPlate guidelines for fruit and vegetable serving sizes at: ChooseMyPlate.gov



Most states have a listing of Farmers Market times and locations on the web, check it out and plan a trip today!

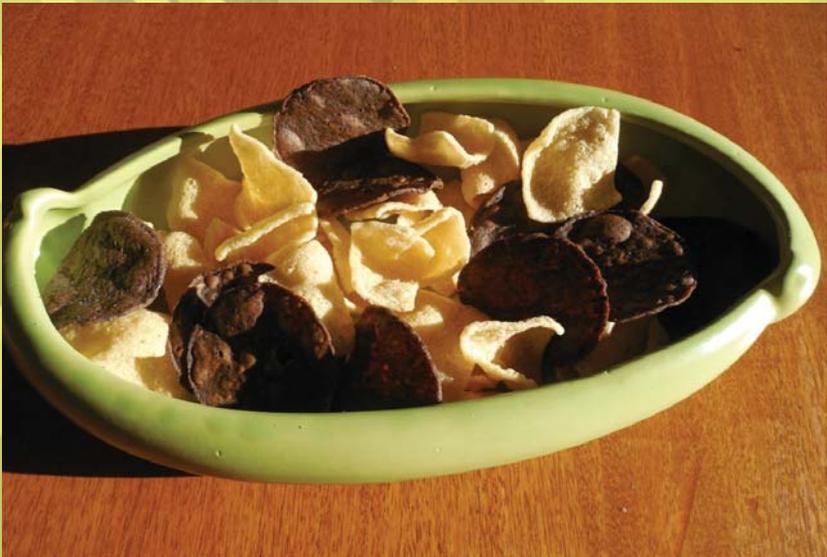
“SMACKIN SNACKIN”

Choose several of your favorite fruits and vegetables,
wash your hands, wash your fruits and vegetables well,
prepare them for dipping,
and
enjoy “smackin snackin” hummus!



CHIPS

There are several choices for chips to dip into your “smackin snackin”. Farmers grow the ingredients to make the chips, a “smackin snackin” favorite. Chips are traditionally made from either potatoes or corn, and then fried in oil. Other crops used to make chips include pulse crops such as beans and lentils. Lentils chips are gluten free and often contain much less fat than traditional chips. Black bean chips are high in Omega 3 and other healthy ingredients. Pick up a bag and check out the ingredients list for these chips, compare products, and make the healthy choice!



“SMACKIN SNACKIN”

Easy as one, two, three!

Another alternative to traditional deep fried tortilla chips is to make your own tortilla chips by baking slices of tortillas in the oven. Slice your tortillas into dipping strips and place on a baking sheet. Bake at 350 degrees for 7 minutes, turn the tortilla strips over and bake until golden brown, about 3 minutes. Let cool and enjoy with your “smackin snackin” dip!

1



2



3



Measurements and Equivalents

U.S. MEASUREMENT

$1/8$ teaspoon or less = a pinch

$1/16$ teaspoon = a dash

1 tablespoon (tbsp) = 3 teaspoon (tsp)

$1/8$ cup = 2 tablespoons

$1/6$ cup = 2 tablespoons + 2 teaspoons

$1/4$ cup = 4 tablespoons

$1/3$ cup = 5 tablespoons + 1 teaspoon

$3/8$ cup = 6 tablespoons

$1/2$ cup = 8 tablespoons

$3/4$ cup = 12 tablespoons

1 cup = 16 tablespoons

Measurements and Equivalents

8 fluid ounces (fl oz) = 1 cup

1 pint (pt) = 2 cups

1 quart (qt) = 2 pints

4 cups = 1 quart

1 gallon (gal) = 4 quarts

1 peck = 2 gallons

4 pecks = 1 bushel

1 bushel = 8 gallons

WEIGHTS

16 drams = 1 ounce (oz)

16 ounces = 1 pound (lb)

100 pounds = hundredweight (cwt)

20 cwt = 1 ton

2000 pounds = 1 ton

GLOSSARY

- *Agriculture - the science or occupation of cultivating the soil, producing crops, and raising livestock
- *Buyer – A party which buys, or agrees to buy, goods or services
- *Chickpea – a pale round seed from chickpeas or garbanzo bean plants, also known as garbanzo beans
- *Climate - the average course or condition of the weather at a place, usually over a period of years, as exhibited by temperature, wind velocity, and precipitation
- *Commodity – and economic product produced by agriculture or mining
- *Crops - plants or plant products that are grown by farmers
- *Farm – a piece of land or area of water used for growing crops or raising animals
- *Farmer - a person who cultivates land or crops or raises animals
- *Farmers Market – a place where farmers and gardeners sell their products directly to consumers
- *Garbanzo bean - a pale round seed from chickpeas or garbanzo bean plants, also known as chickpeas
- *Gardener – a person who tends and cultivates a garden for a living or a hobby
- *Habitat - the place or environment where a plant or animal naturally or normally lives and grows
- *Healthy – having good health, not sick or injured
- *Hummus - a paste of pureed chickpeas usually mixed with sesame oil or sesame paste and eaten as a dip or sandwich spread
- *Ingredient – one of the items that are used to make foods, products, etc.
- *Harvest - the gathering of a crop, or the quantity of a crop gathered in a single season
- *Impurities - matter mixed in with something else, usually not wanted in the mixture

GLOSSARY

- *Irrigation –the watering of land by artificial means to foster plant growth
- *Legume – a type of plant (such as a pea or bean plants) with seeds that grow in long cases (called pods)
- *Lentil – a type of flat, round seed that is related to the pea and is eaten for food as a vegetable or protein
- *Nutrition – the process of eating the right kinds of food so you grow properly and be healthy
- *Nutritious – having substances that a person or animal needs to be healthy and grow properly; promoting good health and growth
- *Operation - an activity of a business or organization
- *Pod – a vessel that contains the seeds of a plant (pea pod)
- *Processing - the act of changing or preparing by special treatment
- *Processing Plant - building or location where processing occurs
- *Processor - a person or machine that processes
- *Pulse crop -the edible crop from various seeds (peas, beans, or lentils) of the legume family; also a plant yielding pulse
- *Seed crop – a crop that is grown in order to harvest seeds from the plant

For more information on Montana Agriculture in the Classroom please visit our website at: <http://agr.mt.gov>. Here you will find other hands on lesson plans for grades K-8 and activities aligned with educational standards for use in your classroom. You will also find teacher resources for learning more about Montana's agriculture commodities.

Education standards for this publication can be found at:
<http://agr.mt.gov/agr/Programs/AgClassroom/>

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Who Knows Who Grows “Smackin Snackin”?

This hands on learning book introduces students to agriculture commodities which are grown in the northern plains states of North Dakota and Montana, and other western states. The book is ideal for reading aloud and then using as a guide for measuring and mixing. The story yields discussions in math, science, and geography. The agriculture commodities yield delicious hummus and dipping snacks!

This book is brought to you by the Montana Department of Agriculture’s “Ag in the Classroom” program, Northern Pulse Growers Association, and the farmers who dedicate long hours to growing food for the world. Partial funding for this book was provided by Northern Pulse Growers Association. Copyright 2013. This work is distributed under the Creative Commons Attribution-Noncommercial 3.0 license.



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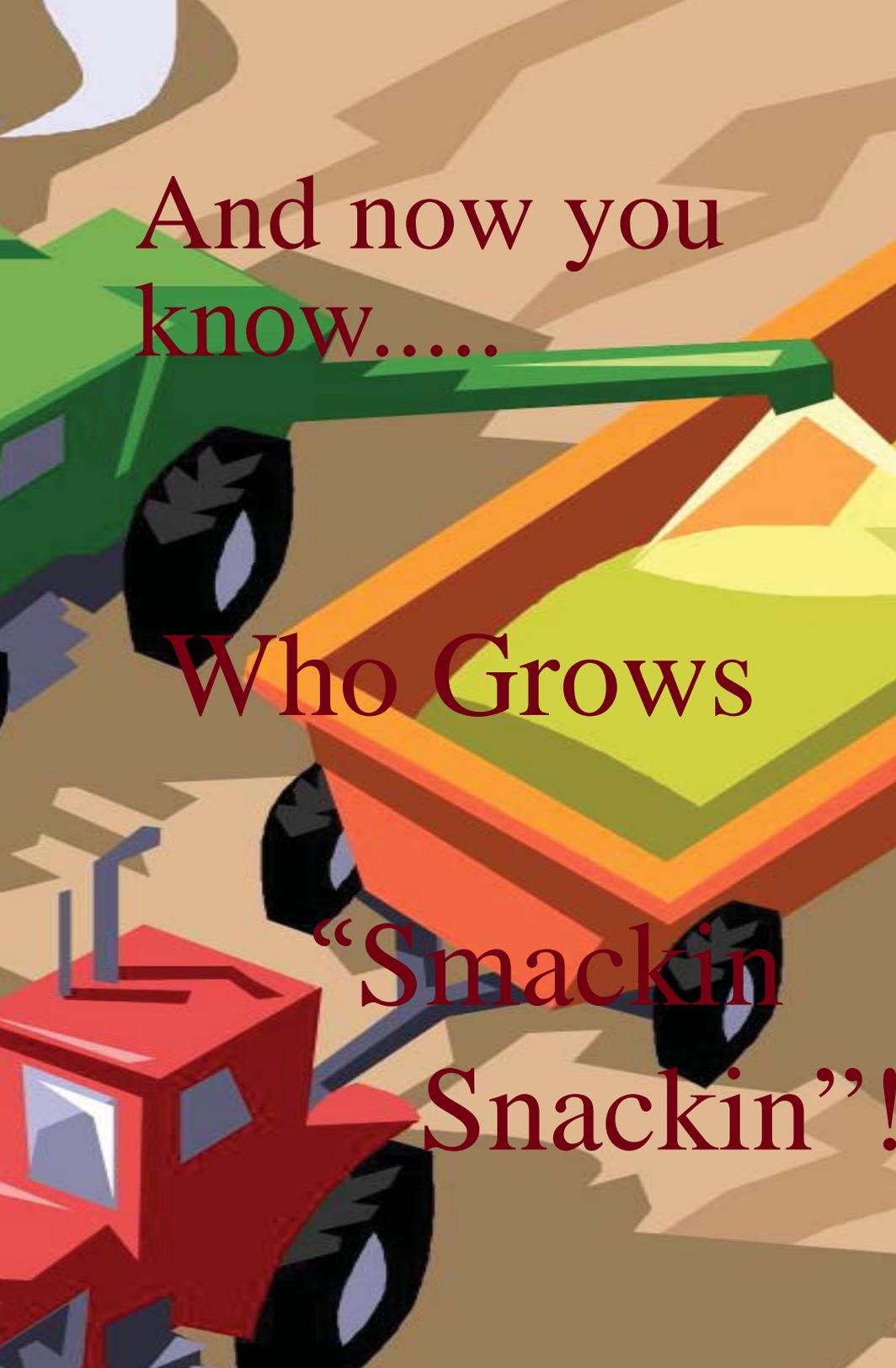


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And now you
know.....

Who Grows

“Smackin
Snackin”!