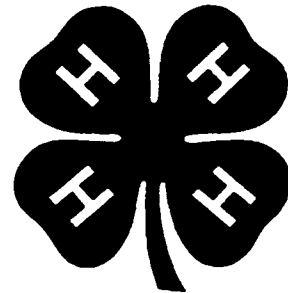


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# Oregon 4-H



## Horse & Rider Nutrition Series

The Horse & Rider Nutrition Series is designed to teach nutrition to youth while teaching nutrition for the horse. The fact sheets are designed for the leader and junior leader to plan learning experiences on each topic.

4-H 1330L  
Revised July 1997



OREGON STATE UNIVERSITY EXTENSION SERVICE



# FOOD

## Makes the Difference for the Horse and Rider

*Leader Guide*  
30L • Reprinted July 1997

### Why these mini-lessons?

There is a lot of interest in horse nutrition these days. We know that many horses in the state could be better fed, and that increased costs have meant horse owners have had to look for cheaper alternatives. Furthermore, scientific studies show that the eating habits of American people have deteriorated in recent years. Haphazard snacking, breakfast skipping, eating out more, and peer pressure all have contributed to the problem.

4-H strives to help youngsters develop to their fullest potential. Good eating habits are important because "we become what we eat." Therefore, nutrition education should be an important part of the total 4-H program.

This series is an attempt to integrate nutrition into a specific 4-H subject matter area. Horse and human nutrition have many things in common—and these mini-lessons attempt to draw the parallel through action.

### Leader training session

After pilot testing the first edition of these in 1974, we concluded that a training session for leaders using these lessons is very important for building positive attitude, to encourage good teaching techniques, and to familiarize leaders with the training information. If possible, plan with key leaders and ask them to assist in presenting the training session. Decide whether one training session or splitting the training into several meetings would be best.

Use teaching techniques the leaders should use in their clubs. Have leaders experience most of the activities so they understand how to play them.

Please note that the word "nutrition" has been excluded almost entirely from the series since it tends to "scare" some people. Instead use words like food, feed, or balanced rations.

### Materials for the training session

<i>4-H</i>	
<i>Eat Right! Feel Right!</i>	32L
<i>Balancing the Diet</i>	33L
<i>How Much to Feed</i>	34L
<i>How Much to Eat</i>	35L
<i>Take Your Horse to Breakfast</i>	36L
<i>Go with Minerals</i>	37L
<i>Vitamins for Vim and Vigor</i>	38L
<i>Trail-Ride Rations</i>	39L

### Supplemental

The following materials are available from the Oregon Dairy Center, 10505 SW Barbur Blvd, Portland, OR 97219:

*Guide to Good Eating*, food groups, 5¢ each.

*Super Four*, photographs of four food groups, 5¢ each.

Catalog of materials (copy sent to county Extension Service offices annually).



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# FOOD

## Makes the Difference for the Horse and Rider

*Teaching Tips*  
31L • Reprinted July 1997

Good performance, good health, and a good disposition depend on balanced rations that provide all the essential nutrients. All of us eat and all of us feed our horses, but we realize there's so much more we could know that would help us do a better job—and maybe even at a lower cost.

This set of eight mini-lessons is full of information and activities to help 4-H'ers learn to put to use principles on feeding their horses and themselves. You don't have to be a nutrition expert to teach these mini-lessons. All the information you need is here.

4-H 9374L, *Food for Fitness*, gives you background information that may be useful in answering questions the 4-H'ers have.

If you're interested in learning more about nutrition, you can order free materials from the Oregon Dairy Center. If a 4-H'er order form isn't included in your packet, ask for one at your county Extension office.

Use lessons 1, 2, 3, and 4 in order. The remaining lessons could be done in any order.

Personalize the lessons. You know what horse feeding problems might be common in your area. You may have an idea what teenagers eat. Relate the content of the lessons to these situations. Bring the lessons "close to home." They'll be more meaningful.

Use the teachable moment. These lessons are simply guides. You may teach the same ideas in ways that are comfortable to you and have a greater impact on the kids. For example, when you and the 4-H'ers are out in the stable, discuss the importance of minerals and what the mineral box (or block) should contain.

Adapt these activities to your situation. For example, if the room is too small, revise the game to fit the room.

Involve 4-H'ers in activities. Encourage 4-H'ers to participate through the suggested game and discussion activities.

Ask junior leaders or older 4-H'ers to conduct the mini-lessons. Older 4-H'ers may enjoy leading some of the games. Let them learn among themselves with you asking a few questions.

Emphasize food for the rider and feed for the horse. It's just as important for the rider to be healthy and have stamina and patience as it is for the horse to perform well.

Serve a nutritious snack. The enclosed snack leaflet gives some suggestions.



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# FOOD

## Makes the Difference #1

*Eat Right! Feel Right!*  
4-H Leader–Junior Leader Guide  
32L • Revised July 1997

### Important ideas

The horse and rider who eat right will feel, look, and do their best.

### Before the meeting

- Do you wish to have one or two junior leaders teach the lesson? If so, assign the responsibility in advance.
- Select which activity you will use. Study the lesson content.
- Arrange for tasty, nutritious snacks if snacks are to be served.

### Why eat right?

Does your horse ever seem to do just the opposite of what you wanted? Do you ever get that grouchy, run-down, tired-out feeling? Food plays a big part in how you and your horse look, feel, and act.

### Activities: (Select 1 or 2)

1. Ask 4-H'ers to divide into 4 to 8 groups of 2, 3, or 4 members.

(a) Ask half the groups to think of a benefit a horse gets from eating balanced rations.

Each group will act out one benefit. Other 4-H'ers watching will guess what benefit the group is acting out.

The leader can conduct additional discussion, if desired, after the group finishes acting out a particular benefit. (Use information from the table that follows.)

(b) Ask remaining groups to think of a benefit the rider gets from eating right.

Do as described in (a) above.

### 2. Guided discussion

(a) *Let's talk about some of the benefits your horse gets from eating a balanced ration. Can you name some?* (These could be listed on a large piece of paper or blackboard.)

(b) *To be a top-notch rider, eating right is important for you, too. Thinking of the things food does for your horse, does it do some of the same things for you?* (Discuss points listed as follow.)

*So you see, eating right is important, not only for a top-notch horse but for a top-notch rider as well. You need a healthy horse, and your horse needs a rider who is alert and in good condition.*

### What happens to the horse and rider who don't eat right?

The most likely consequence of poor nutrition is "hidden hunger," which is caused by a slight deficiency of one or more nutrients. Hidden hunger may not be obvious, but it takes its toll in money, general health, and performance. Symptoms include frequent illness (more doctor bills), dull hair or coat, dry or hidebound skin, and grouchy,



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depressed, listless, pooped-out feelings.

Obvious deficiency diseases are a possibility but happen much less often than hidden hunger.

In the horse, iron deficiency (anemia), salt deficiency, a lack or imbalance of calcium and phosphorus, and overfeeding all can cause foundering. A vitamin A deficiency can cause eye ailments.

In humans, rickets (vitamin D deficiency), scurvy (vitamin C deficiency), vitamin A deficiency, growth retardation, and other diseases do occur in the United States.

Hidden hunger, however, is by far the most common deficiency disease—with an estimated 50 percent of all Americans suffering from it. Eating habits of Americans have gradually worsened during recent years. This is why it is so important to know the foods and feed that will give you and your horse the essential nutrients.

4-H 9311LX, *The Food Guide Pyramid*, gives you additional background information that may be useful in answering questions 4-H'ers have about rider nutrition.

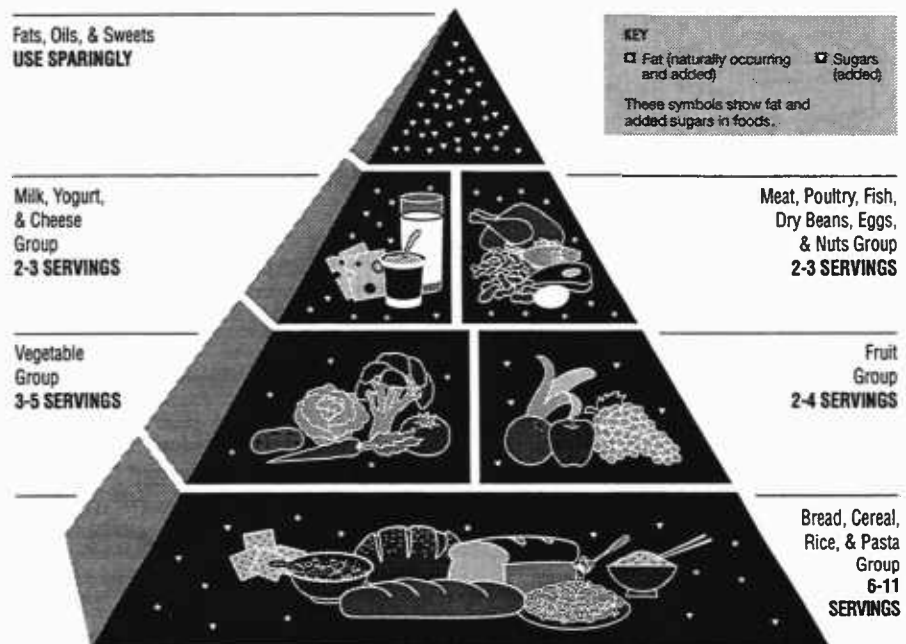
*Throughout this year we'll spend a little time at each meeting learning how to give our horse top-quality rations at the lowest possible cost. We'll also learn about the foods that keep you in top shape.*

Prepared by Judith Forrest, former Extension food and nutrition specialist, Oregon State University.

Benefits of Eating Right	
Horse	Rider
<b>Fewer Doctor (Vet) Bills</b>	
Resists illnesses No nutrient deficiencies	Fewer colds, flus, etc. Fewer days of school missed
<b>Look Healthy—Look Good</b>	
Thick, glossy coat Pliable skin Pink eye membrane	Glossy hair Smooth skin Bright eyes
<b>Feel Good! Do Good!</b>	
Content: Looks unworried Alert: Perks up ears at slightest noise or movement Trains more easily Learns faster Avoids accidents Performs consistently better	Muscles in good condition—especially leg muscles More stamina when riding More patience with your horse More energy More attentiveness: Learn better and get better grades

## Food Guide Pyramid

### A Guide to Daily Food Choices



Source: U.S. Department of Agriculture/U.S. Department of Health and Human Services



# FOOD

## Makes the Difference #2

*Balancing the Diet*  
 4-H Leader–Junior Leader Guide  
 33L • Revised July 1997

The horse and rider each need the same nutrients to keep healthy—the same protein, vitamins, minerals, energy, and water. The horse eats hay and whole grains. But we can't digest these, so we eat different foods. But for both the horse and the rider, a balanced diet is the ticket to good health.

Balanced Rations for the Horse	
Basic 3	Plus 1
roughage, mineral concentrate, water	grain

Balanced Diet for the Rider
Food Guide Pyramid
milk, yogurt, cheese; meat and meat alternates; fruits; vegetables; breads, cereals, rice, pasta

### Activity

Play the Basic 3 + 1 Relay (as described on page 2).

### Discussion

Think for a minute—What did your horse eat today? Did the horse get the basic 3?

### Do idle horses need grain?

Not if the hay is of high quality. If they get too much feed and they are not working it off, they tend to get fat.

Since grain is a high-energy feed, grain is most appropriate for horses with high energy needs such as those that are working or growing. However, if an idle horse is feeding on low quality hay, the rider may wish to supplement it with some grain.

Now you know what the horse should eat—but what

about you? What should you eat to be fit for riding?

We riders eat a much wider variety of foods than our horses do. Many of these fit into the Food Guide Pyramid groups. How do you know which foods fit into which groups? Let's find out by playing the food pyramid relay.



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## Basic 4 and Basic 3 + 1 Relays

### The object

For a team to win the most points by quickly placing foods or feeds into correct food group.

### Before the meeting

#### 1. You will need

- 9 large sheets of newspaper for each team (2 or more teams; plan on 5 to 10 people per team). Classified ads work well.
- Crayon or felt tip pen.
- Pages 3 and 4 of this lesson.
- To add a lighthearted touch to the game, you could use broomsticks (upside down) as horses. You would need one broomstick for each team.

2. Write the names of one food pyramid group on each sheet of newspaper. Remember—each team gets one set of these. You need two sets for two teams; three sets for three teams, etc.

Food Guide Pyramid			
fruits	breads, cereals, rice, and pasta	vege- tables	e x t r a s
milk, yogurt, and cheese	meat, poultry, fish, dry beans, eggs, and nuts	fats, oils, and sweets	

3. Cut apart the names of foods on page 5. You'll need one set of food names for each team. Put each set in a paper bag. Or, you could write your own food card in larger print on small (3 x 5 inch) sheets of paper.

### At the meeting

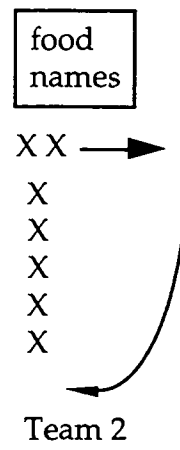
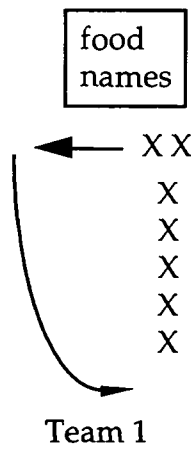
Play each relay game once.

### How to play the games

- Divide the group into two or more teams. Plan for about 5 to 10 people per team.
- Explain the rules of the game. Help members understand what to do by giving examples.
- After the game, have opposing teams identify what they think are incorrectly placed foods. Discuss these.
- Figure score.

Basic 3 + 1			
roughage	mineral concentrate	water	grain

Food Guide Pyramid	e x t r a s	
	vegetables	fats, oils, and sweets
	bread, cereals, rice, and pasta	meat, poultry, fish, dry beans, eggs, and nuts
	fruits	milk, yogurt, and cheese



Food Guide Pyramid		
fruits	bread, cereals, rice, and pasta	vegetables
milk, yogurt, and cheese	meat, poultry, fish, dry beans, eggs, and nuts	fats, oils, and sweets
e x t r a s		

1. The teams line up as shown.
2. When the whistle blows, the first team member picks up a food and rides his horse (broomstick) to the chart, places the food on the chart, and rides back to the team where the next team member takes over.
3. Foods that don't fit into one of the food groups should be placed on the paper labelled "Extras."
4. After playing, each team can be given time to inspect the opposing team's chart for incorrectly placed foods. You can encourage discussion about placement of the foods by asking questions such as: "Which food group does pizza belong to? What is pizza made of?" (or, "Which food group does alfalfa belong to?")

Key to Food Guide Pyramid						
Fruits	Milk, yogurt, and cheese	Meat, poultry, fish, beans, eggs, and nuts	Vegetables	Bread, cereal, rice, and pasta	"Extras"	Fats, oils, and sweets
oranges bananas strawberries blueberries	milk cheese yogurt vanilla pudding milkshake pizza*	baked beans split pea soup peanut butter scrambled eggs chicken hamburger pizza* dry beans nuts fish	carrots squash potatoes pizza*	hamburger bun toast cereal noodles rice pizza pasta	tea soda pop candy potato chips doughnuts	chocolate candy butter syrup jam jelly



Key to Basic 3 + 1			
<i>Roughage</i>	<i>Mineral concentrate</i>	<i>Water</i>	<i>Grain</i>
alfalfa clover oat hay grass hay	iodized salt bone meal	plenty of fresh water	oats barley soybean meal linseed meal

5. Figure the score.

Point system: +3 for the team that finishes first  
+1 for each correctly placed food  
-1 for each incorrectly placed food spotted by the opposing team

milk	cheese	yogurt	dry beans
vanilla	pudding	milkshake	eggs
pizza	baked beans	split pea soup	nuts
peanut butter	scrambled eggs	chicken	pasta
hamburger	chicken	hamburger	fish
carrots	squash	potatoes	fats, oils, & sweets
oranges	bananas	hamburger bun	rice
toast	cereal	noodles	kiwis
rice	tea	soda pop	blueberries
candy	butter	potato chips	chocolate
doughnuts	alfalfa	clover	syrup
oat hay	grass hay	iodized salt	jam
bone meal	oats	barley	jelly
soybean meal	linseed meal	yogurt	mayonnaise



# FOOD

## Makes the Difference #3

*How Much to Feed?*  
*4-H Leader–Junior Leader Guide*  
 34L • Reprinted July 1997

### Important note

Feed your horse well by giving it enough servings from each food group, every day. "2 + More" is the key to meeting the "Basic 3 + 1."

### Before the meeting

Decide which activities you will use.

### Roll call activity (a review)

Call out the name of one type of feed for the horse, followed by a

4-H member's name. That member should respond with the name of a food group. Remember the basic 3 + 1 includes roughage, minerals, water, and grain for growing or working horses. Leaders should refer back to lesson 2, page 4, "Key to Basic 3 + 1" for answers.

### When should you supplement your horse's protein?

If you are feeding a high quality hay, a protein supplement such

as linseed or soybean meal is not necessary. If the hay is low quality, adding ½ to 1 pound protein supplement to the ration will be adequate for all horses.

### How can you identify high-quality roughage?

Green leafy hay that's free from mold and dust. Suggested activity: Leaders could bring samples of low and high quality hays for 4-H'ers to compare. Contact your county agent for help.

### "2 + More" (Discussion)

Food Group	Number of Servings	Amount to Feed
Hay	Two (morning and late afternoon or evening)	Refer to horse rations table on back
Mineral concentrate	Available all day	As much as the horse wants
Water	Available all day	As much as the horse wants
Grain	Needed if the horse is working or growing. Two plus additional feedings if needed.	Refer to horse rations table on back.



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**Figure how much to feed**  
The horse, just like the rider, needs enough food to give all the vitamins, minerals, protein, and calories to keep healthy. Each 4-H'er can figure the

amount of rations to feed his horse using the chart below.

**Note**  
With all rations and for all classes and ages of horses,

provide free access to separate containers of (1) iodized salt and (2) a mixture of 1 part salt and 2 parts steamed bonemeal or other suitable calcium-phosphorus supplement.

### Rations for Your Horse

Age	Feed per 100 lb Body Wt.	Hay	Grain
Foals before weaning (weighing 100 to 350 lb with projected mature weights of 900 to 1,400 lb)	½ to ¾ lb grain together with a quantity of hay within some range	Legume hay, alfalfa	Oats—80% Wheat bran—2% or wheat middlings
Weanlings (weighing 350 to 450 lb)	1 to 1½ lb grain 1½ to 2 lb hay	Grass-legume mixed or ½ legume hay	Oats—100%
Yearlings, second summer (weighing 450 to 700 lb)	Good, luxuriant pastures	Hay not needed on excellent pasture	Not needed on excellent pasture
Yearlings or 2-year-olds, second winter (weighing 700 to 900 lb)	½ to 1 lb grain 1 to 1½ lb hay	Grass hay or grass-legume mixed	Oats—100%
Light horses at work; riding, driving, and racing (weighing 900 to 1,200 lb)	<i>Hard use</i> —1¼ to 1½ lb grain and all the hay they can eat. From 1 to 1¼ lb hay, maybe up to 2 lb hay per 100 lb wt. <i>Medium use</i> —¾ to 1 lb grain, 1 to 1¼ lb hay <i>Light use</i> —½ to ¾ lb grain; ¼ to 1 lb hay	Grass hay or grass-legume mixed	Oats—100% Rolled barley Corn-Oats-Barley (COB)
Mature idle horses, stallions, mares, and geldings (weighing 900 to 1,200 lb)	1½ to 1¾ lb hay	Pasture in season or grass-legume mixed hay	(With grass hay, add ¾ lb of a high-protein supplement daily)



# FOOD

## Makes the Difference #4

*How Much to Eat?*  
*4-H Leader–Junior Leader Guide*  
35L • Revised July 1997

### **Important idea**

Eating the food pyramid way is the key to getting enough servings of the foods you need.

### **Before the meeting**

Do you wish to have a junior leader conduct the lesson? If so, assign the responsibility in advance.

If you plan to have a snack, make it a delicious, nutritious one.

### **Roll-call activity—a review**

Call out the name of a food, followed by a 4-H'er's name. The 4-H'er should respond with the name of a pyramid food group.

### **Eat the food pyramid way**

Eating the food pyramid way will help assure the rider of enough vitamins, minerals, protein and calories to stay in top shape.

Teenagers need more calories (energy) than provided by the pyramid food groups alone. They should eat additional servings from the main food groups along with some foods from the "extra" food group such as jam, butter, or mayonnaise.

### **The Food Guide Pyramid is based on variety, proportion, and moderation . . .**

#### *Variety*

Each of the five food groups provides some, but not all, of the nutrients necessary for good health. The Food Guide Pyramid emphasizes foods on the lower three layers of the pyramid and suggests eating a variety of food in each food group—different types of food provide different nutrients.

#### *Proportion*

Foods from all of the food groups are important, but you need more of some foods than others. The Food Guide Pyramid indicates a general range of servings from each food group with emphasis on the food groups in the lower levels of the pyramid. (See the Food Guide Pyramid in 32L). Notice that the bread group accounts for the largest proportion of servings. The vegetable group is second, followed by fruits, milk, and meats.

The exact number of servings each person needs depends on their age, gender, size, and activity level. More specific numbers of servings suggested for various types of people appear below. Most younger 4-H'ers fit into the middle group with a suggested intake of 9 servings of breads, 4 servings of vegetables, 3 servings of fruit, 2 servings of milk, and 2 servings of meat.



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## How many servings do you need each day?

	Many women, older adults	Children, teen girls, active women, most men	Teen boys, active men
Bread group	6 servings	9 servings	11 servings
Vegetable group	3 servings	4 servings	5 servings
Fruit group	2 servings	3 servings	4 servings
Milk group	2–3 servings*	2–3 servings*	2–3 servings*
Meat group	1 (5 oz. total)	2 (6 oz. total)	3 (7 oz. total)
<i>Total fat grams</i>	53	73	93
<i>Calorie level**</i>	<i>about 1,600</i>	<i>about 2,200</i>	<i>about 2,800</i>

\*Teenagers, young adults to age 24, and women who are pregnant or breastfeeding need 3 servings

\*\*Calorie levels for choosing lowfat, lean foods from the five food groups, and using fats, oils, and sweets sparingly.

### *Moderation*

Knowing what counts as “a serving” is an important part of using the Food Guide Pyramid. Considering the size of the portions, it may be easier to understand how all the requirements of a balanced diet can be met without eating as much food as one might think.

Moderation is particularly important where the tip of the pyramid is concerned. Fats, oils, and sweets should be consumed in small amounts. They provide calories, but little else.

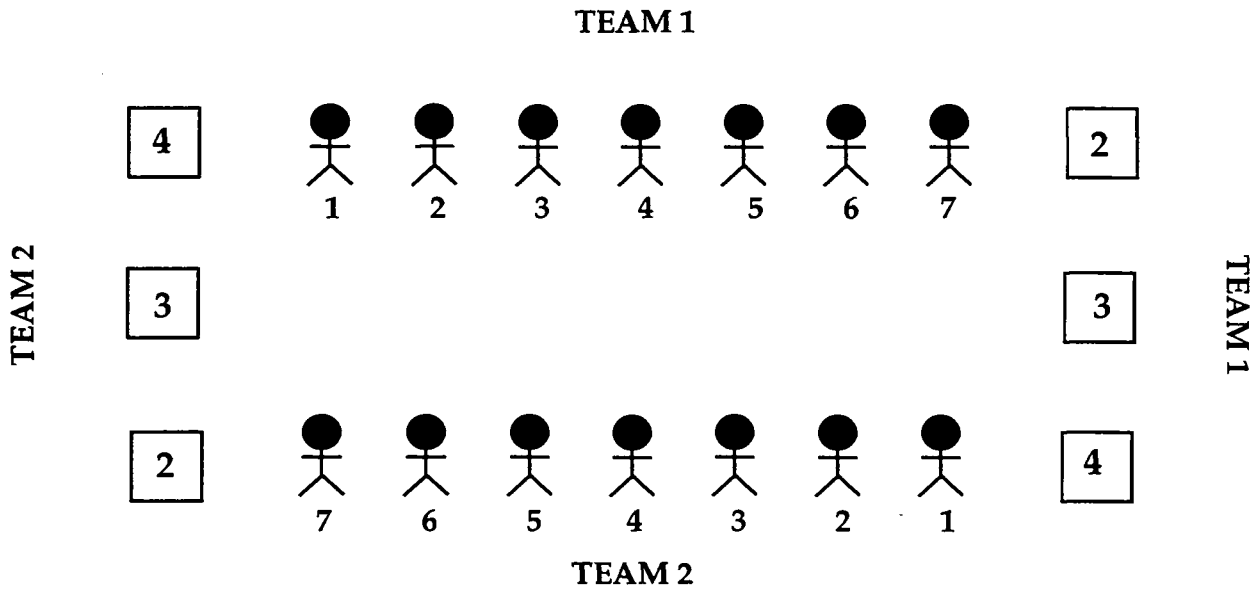
Fats and sugars are also found in the other food groups. Look for the small circles and triangles in the background of the food groups shown on the Food Guide Pyramid. These symbols show fat and added sugars in food. When choosing foods from the five food groups, choose most often those with little fat or sugar—English muffins, for example, instead of doughnuts; fresh fruit instead of fruit canned in heavy syrup; and so on.

## Relay game

Divide the children into two teams. Put one team on one side of the room and the other team on the other side of the room. Both teams should be lined up so they are facing the other team. Teams should be separated by no more than 30 feet.

Halfway between the two teams (in the center, face down) put an equal number of foods (names or pictures) from each of the five food groups. If you wish, you can use the same foods you used for the relay game last month. Between the two teams at both ends of the line, draw with chalk or use masking tape to make

three 3-foot squares on the floor. Leave a 3-foot space between the squares. Make the squares in line with the other squares and at right angles to the opposing teams. (See diagram.) Write the numbers 4, 3, and 2 in the squares.



Have each team number off so that the #1 of one team is at the opposite end of #1 of the other team. Decide how many times each team will run (once or twice).

When the whistle blows, #1 of each team runs to the center, picks up a food, and runs to deposit it in the square, telling the correct number of servings

needed each day, then returns to his or her spot. Then #2 follows. Continue until each team member has run once or twice.

After the running is completed, each team inspects the opposing team's foods. The team may question any it thinks are incorrectly placed. Discuss the correct placement for foods that are questioned.

## Scoring

- +3 for finishing first
- +1 for each correctly placed food
- 1 for each incorrectly placed food identified by the opposing team
- 1 for each opposing team's food that the team incorrectly questioned



# FOOD

## Makes the Difference #5

*Take Your Horse to Breakfast!*  
*4-H Leader–Junior Leader Guide*  
36L • Reprinted July 1997

### **Important idea**

Breakfast is an especially important meal for the horse and rider.

### **Before the meeting**

Become familiar with the lesson. Also, arrange for a tasty, nutritious snack.

### **How important is breakfast?**

When breakfast time arrives, how many hours has it been since you last ate a meal or evening snack? (Everybody count and give answers.) This is much longer than the 3 to 6 hours we would normally go between meals or snacks during the day. Breakfast does just what the word says. It “breaks the fast” that started with dinner or a snack the night before.

Mornings are usually an active time of day. During the week, it’s off to school. On weekends, you may be horseriding or helping with the work to be done at home. We need get-up-and-go power; we need to be alert. Breakfast gives you the

go-power you need. It prevents the mid-morning slump.

An Iowa State University breakfast research study showed that adults and children who ate an adequate breakfast got more work done in the late morning hours. Their reactions were

quicker. They didn’t tire as easily. All of these factors are important in horseriding. You need stamina and quick reactions. In school, you also need to be efficient and alert. The Iowa study showed that students who ate breakfast did better in school.

---

## Why Do People Skip Breakfast?

### *Discussion*

- Ask each group of four to discuss why they did or did not eat breakfast. For each person who skipped breakfast, the group should help him or her think of ways to make it easier to eat breakfast.
- Discuss common reasons for skipping breakfast: not hungry, too tired in the morning, don’t get up on time, nobody to fix it for me, don’t like breakfast foods, trying to lose or avoid gaining weight.
- If your horse skipped breakfast, chances are it’s because you didn’t put feed out for it.



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What is a Good Breakfast?			
Meals	Rider	Nonworking Horse	Working Horse
Breakfast	$\frac{1}{4}$ – $\frac{1}{3}$ daily needs: milk, meat, fruit, bread or cereal OR milk, fruit, two servings of bread or cereal	less than $\frac{1}{2}$ hay	$\frac{1}{3}$ grain, $\frac{1}{3}$ hay
Lunch	$\frac{1}{3}$ daily needs		$\frac{1}{3}$ grain, $\frac{1}{4}$ hay
Dinner	$\frac{1}{3}$ daily needs	more than $\frac{1}{2}$ hay	$\frac{1}{3}$ grain $\frac{1}{2}$ hay

Your horse needs breakfast for the same reasons you do. Horses learn to anticipate their feed so they should be fed during the cool of the day early in the morning and near sun-down in the evening. If the horse is working, a noon ration should be fed in addition to the usual morning and evening rations.

Both the horse and rider need a substantial amount of their energy, protein, vitamins, and minerals for breakfast.

The rider may wish to eat a vitamin C fruit at breakfast time; this way you'll be sure to

have your vitamin C for the day.

Sudden changes in the diet should be avoided to prevent the horse from going off feed or experiencing digestive disturbances. Add new feeds to the diet gradually.

If you feed your horse grain, you usually feed the grain before the more bulky roughage. When starting horses on grain, it should be mostly oats, preferably crimped or rolled. Since oats are bulky and high in fiber, horses usually get accustomed to oats without digestive difficulty.

### Activity: Take your horse to breakfast

Your horse needs breakfast just like you do. Maybe he'd like company for a treat! Each group of four plan a balanced breakfast that each group member could take to the barn to eat with their horse. Also plan the horse's breakfast.

The leader should ask each group to tell others what they planned.

### Activity: Don't get in a breakfast rut

What foods are "breakfast foods?" (Ask 4-H'ers to name some.) Orange juice, cereal, toast, pancakes, eggs, bacon, and sausage are typical breakfast foods. They are traditional, but do you ever get tired of the same old foods? Breakfast can include any food. Choose the ones you like. For example: cheese sandwich and fruit juice; or hamburger, milkshake, and an orange.

The leader should ask each group of four to plan a non-traditional breakfast of any foods they'd enjoy eating in the morning. It should follow the balanced breakfast pattern. Ask groups to share ideas. Encourage them to try the breakfast they planned and report back next month on how they like it.



# FOOD

## Makes the Difference #6

*Go With Minerals*  
*4-H Leader—Junior Leader Guide*  
 37L • Revised July 1997

### Before the meeting

Become familiar with how the game is played, and the questions, answers, and discussion points. Cut apart the questions on pages 3 and 4.

### The meeting plan

1. Play the MINE RALley Game.
2. After completing each question, discuss with the group the correct answers.
3. Add up the score.
4. Play the game again, if you have time.

### Game: MINE RALley

The object of the game is for each team to get the highest score by answering the questions first and with correct answers.

### Before the game

1. Decide how many teams you expect to have. (Each team could have from three to six team members.)
2. Cut apart the questions. Clip the copies of each question together. Each team will need one copy of all the questions.
3. Take at least one pencil for each team.

The food is for	Minerals come from	Pay special attention to
<i>Horse</i>	feed, mineral supplement	calcium, phosphorus, iodine
<i>Rider</i>	food pyramid groups, iodized salt	calcium, iron, iodine

4. Study the questions and answers on pages 3 and 4.

### How to play

1. Divide 4-H'ers into teams, each having about the same number of team members.
2. Each team should be in a different part of the room.
3. You read the question. (Don't read the answer.)
4. Each team sends a member to pick up a copy of the question.
5. Each team discusses, agrees on, and writes down the answer. A team member takes the written answer to the leader. (The team that's first with the correct answer gets extra points).
6. The leader asks teams to give their answers, in order of team

finishing first, second, and third. Then the leader asks all teams "Which answer is correct? Why?"

7. The leader keeps track of score for each team as game proceeds.
  - +5 for the correct answer given first
  - +4 for the correct answer given second, third, or fourth
8. Repeat steps 3, 4, 5, 6, and 7 for each question.
9. Total the score.
10. Play the game again if there is time and interest. For review, play again at another meeting.



## Questions, answers, and discussion points

### Iodine

1. Iodine is the mineral that prevents **goiter**.  
*Goiter is an enlarged thyroid gland located in the neck. When you don't get enough iodine, the thyroid can't function properly. The thyroid gland tries to compensate by getting larger, causing a goiter.*
2. A horse and rider can't get enough of the mineral, **iodine**, from food alone.  
*Oregon is in a "goiter belt." The soils of the Northwest are very low in iodine, so the food we eat is very low in iodine.*
3. Where should the horse and rider get the iodine they need for good health?  
*Iodized salt. Buy salt in the box that says "iodized." It costs the same as "plain" salt.*
4. The amount of iodized salt a horse needs daily is **about 3 ounces**.  
*This amounts to about 1 to 1 1/3 pounds per week. The salt requirement will vary according to the temperature and the amount of work the horse does.*

### Calcium

5. Two minerals important for strong bones and teeth are **calcium and phosphorus**.  
*Calcium and phosphorus make bones hard and strong.*
6. A horse ration of grass pasture, grass hay, and farm grains is usually **deficient in calcium but adequate in phosphorus**.  
*A horse ration that is one half or more legume hay, such as alfalfa or clover, will be adequate in calcium. Because of differences in types of forages, horses should have access to special mineral supplements.*
7. A horse's mineral box should have **two** compartments. One compartment should contain **iodized salt**. The other compartment should contain **bone meal or dicalcium phosphate mixed with salt**.  
*Trace mineralized salt contains iodine as well as small amounts of other minerals. Mix steamed bone meal or dicalcium phosphate with salt in a ratio of two parts mineral to one part salt. Cover the mineral box to keep rain from getting into it.*
8. A food that is especially rich in calcium is **milk**.  
*Milk is the only food in the typical American diet that*

*provides lots of calcium. It's especially important for teenagers and children because they are growing. Foals also get most of their calcium and phosphorus from milk, but yearlings and horses get most of theirs from hay, grains, and a mineral supplement.*

9. A teenager needs **four** servings of food from the milk group each day.  
*A serving is an 8-ounce cup of milk. You can substitute other dairy products such as cheddar cheese, yogurt, and ice cream for part of the milk.*

### Iron

10. Iron is important to build **hemoglobin** in our blood.  
*Hemoglobin carries oxygen to our body cells. Without enough iron, the hemoglobin gets low, causing iron deficiency anemia. A person with anemia tires easily because not enough oxygen is carried through the blood to the body cells.*
11. The age-gender group frequently deficient in iron is **teenage girls**.  
*Teenage girls and women have high iron needs because of iron lost through menstruation and also iron used during pregnancy. Frequently teenage girls don't eat enough from the pyramid food groups. Do you?*

## MINE RALley Game Questions

Cut the questions apart. Clip copies of each question together.

- Iodine is the mineral that prevents \_\_\_\_\_.  
Iodine is the mineral that prevents \_\_\_\_\_.  
Iodine is the mineral that prevents \_\_\_\_\_.  
Iodine is the mineral that prevents \_\_\_\_\_.
- A horse and rider can't get enough of the mineral \_\_\_\_\_ from food alone.  
A horse and rider can't get enough of the mineral \_\_\_\_\_ from food alone.  
A horse and rider can't get enough of the mineral \_\_\_\_\_ from food alone.  
A horse and rider can't get enough of the mineral \_\_\_\_\_ from food alone.
- Where should the horse and rider get the iodine they need for good health? \_\_\_\_\_.  
Where should the horse and rider get the iodine they need for good health? \_\_\_\_\_.  
Where should the horse and rider get the iodine they need for good health? \_\_\_\_\_.  
Where should the horse and rider get the iodine they need for good health? \_\_\_\_\_.
- The amount of iodized salt a horse needs daily is \_\_\_\_\_.  
The amount of iodized salt a horse needs daily is \_\_\_\_\_.  
The amount of iodized salt a horse needs daily is \_\_\_\_\_.  
The amount of iodized salt a horse needs daily is \_\_\_\_\_.
- Two minerals important for strong bones and teeth. \_\_\_\_\_ and \_\_\_\_\_.  
Two minerals important for strong bones and teeth. \_\_\_\_\_ and \_\_\_\_\_.  
Two minerals important for strong bones and teeth. \_\_\_\_\_ and \_\_\_\_\_.  
Two minerals important for strong bones and teeth. \_\_\_\_\_ and \_\_\_\_\_.
- A horse ration of grass pasture, grass hay, and farm grains is usually deficient in \_\_\_\_\_ but adequate in \_\_\_\_\_.  
A horse ration of grass pasture, grass hay, and farm grains is usually deficient in \_\_\_\_\_ but adequate in \_\_\_\_\_.  
A horse ration of grass pasture, grass hay, and farm grains is usually deficient in \_\_\_\_\_ but adequate in \_\_\_\_\_.

A horse ration of grass pasture, grass hay and farm grains is usually deficient in \_\_\_\_\_ but adequate in \_\_\_\_\_.

7. A horse's mineral box should have \_\_\_\_\_ compartments. One compartment should contain \_\_\_\_\_ salt. The other compartment should contain \_\_\_\_\_ or \_\_\_\_\_ mixed with \_\_\_\_\_.

A horse's mineral box should have \_\_\_\_\_ compartments. One compartment should contain \_\_\_\_\_ salt. The other compartment should contain \_\_\_\_\_ or \_\_\_\_\_ mixed with \_\_\_\_\_.

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A horse's mineral box should have \_\_\_\_\_ compartments. One compartment should contain \_\_\_\_\_ salt. The other compartment should contain \_\_\_\_\_ or \_\_\_\_\_ mixed with \_\_\_\_\_.

8. A food that is especially rich in calcium is \_\_\_\_\_.

A food that is especially rich in calcium is \_\_\_\_\_.

A food that is especially rich in calcium is \_\_\_\_\_.

A food that is especially rich in calcium is \_\_\_\_\_.

9. A teenager needs \_\_\_\_\_ servings of food from the milk group each day.

A teenager needs \_\_\_\_\_ servings of food from the milk group each day.

A teenager needs \_\_\_\_\_ servings of food from the milk group each day.

A teenager needs \_\_\_\_\_ servings of food from the milk group each day.

10. Iron is important to build \_\_\_\_\_ in our blood.

Iron is important to build \_\_\_\_\_ in our blood.

Iron is important to build \_\_\_\_\_ in our blood.

Iron is important to build \_\_\_\_\_ in our blood.

11. The age-gender group frequently deficient in iron is the \_\_\_\_\_.

The age-gender group frequently deficient in iron is the \_\_\_\_\_.

The age-gender group frequently deficient in iron is the \_\_\_\_\_.

The age-gender group frequently deficient in iron is the \_\_\_\_\_.



# FOOD

## Makes the Difference #7

*Vitamins for Vim and Vigor*  
*4-H Leader–Junior Leader Guide*  
38L • Reprinted July 1997

### Important ideas

- The horse and rider need to eat dark green and deep orange vegetables (or hay, for the horse) to get vitamin A.
- The growing horse and rider get vitamin D through sunshine; the rider also gets it from vitamin D fortified milk.

### Planning

Become familiar with the lesson material. Take several sheets of paper and pencils to the meeting.

Vitamins keep you and your horse perking. You need some 13 different vitamins. You don't need many vitamins—just enough to meet the body's needs. With proper feeding and sunshine, you and your horse can get all the vitamins you need from food.

Suppose you don't eat the right foods and you don't get enough vitamins. Will you get a deficiency disease like beriberi or rickets? Well, you could; your horse could, too. More likely you'll get "hidden hunger."

What do you think that is? (Let 4-H'ers answer.) Hidden hunger means you or your horse get part of, but not enough, of the vitamins needed. Hidden hunger means the body limps along. Either the horse or you will get tired faster; performance goes down. You get grouchy more easily. You get sick more often.

Millions of Americans are suffering from hidden hunger—and we don't want ourselves or our horses to be a statistic. Let's find out what we can do about it.

### Activity

Pair up the 4-H'ers and give each pair a pencil and paper. Have them answer these questions:

1. *Did you eat some fruits and vegetables today? Each of you tell your partner which, if any, you ate and list them.*
2. *Together, you and your partner list all the dark green and deep orange vegetables and fruits you can think of.*
3. *Dark green and deep orange vegetables give us an important vitamin. Which vitamin is it?*
4. *What food did you list?*

(Remind the 4-H'ers that the dark green and deep orange fruits and vegetables provide lots of vitamin A. The other green and yellow vegetables provide only a small amount.)



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# Sources of Vitamin A

Excellent	Moderate	Poor
<p>yams sweet potatoes winter squash (Danish, butternut) apricots cantaloupe carrots broccoli dark leafy greens (spinach, beet greens, turnip greens) green peppers</p>	<p>plums watermelon tomatoes</p> <p>These provide some vitamin A, but not enough to do the complete job.</p>	<p>Some common green or yellow vegetables have only a very small amount of vitamin A. The amount of vitamin A in:</p> <p>7 cups of greens beans, or 6 cups peas, or 10 cups lima beans, or 7 cups corn, or 20 oranges</p> <p><b>equals</b> the amount of vitamin A in 1 medium carrot!</p>

5. *Your horse needs vitamin A, too. From what part of his feed should your horse get vitamin A?*

Green hay. During the months when the pasture isn't green, green hay should be supplied from the barn. Is your horse getting some green hay every day?

6. *What are the symptoms of severe vitamin A deficiency?*

In the horse and human, symptoms include night blindness, reproduction difficulties, dry skin, and stunting of growth. The horse also may have poor or uneven hoof development, difficult breathing, uncoordinated movement, and poor appetite. The deficiency may be cured by a commercial vitamin A supplement and addition of green hay to the diet.

7. *There is one vitamin that's especially important to growing animals—including foals, yearlings, and you too! What is it?*

Vitamin D makes it possible for the body to use calcium and phosphorus to build strong bones. Without vitamin D, rickets can develop. Where should a foal or yearling be getting vitamin D? Direct sunlight and green hay. Sunlight provides energy for vitamin D to be formed under the skin. In addition, of course, the foal must have access to adequate calcium and phosphorus through the mineral block and green pasture or hay.

8. *Where should children and teenagers get their vitamin D?*

Direct sunlight is one source. But because not all infants and children may be getting enough vitamin D through sunshine, pasteurized milk has been fortified with vitamin D. The milk then provides vitamin D, calcium, and phosphorus all together in one food. When you buy milk, check to be sure the label says vitamin D. Fresh milk from the farm doesn't have vitamin D added.

## Summary

Where do you get vitamin A? Dark green and deep orange fruits and vegetables. Where do you get vitamin D? Sunshine and vitamin D fortified milk. Your horse and you need these every day for good health.



# FOOD

## Makes the Difference #8

*Trail-Ride Rations*  
*4-H Leader-Junior Leader Guide*  
39L • Revised July 1997

### Important idea

Planning, preparing, and packing balanced rations for the horse and rider are an important part of getting ready for the trail ride.

### Advance planning

Decide how you will involve all the 4-H'ers in planning, buying, and packing the rations for a 1-day or more trail ride.

### Horse rations

Horse rations will vary depending upon availability of feed at various stops on the trip. If horses are to be tied at night then they should have access to hay and grain. If they are picketed and allowed to eat grass, then only a concentrate such as oats will have to be included in the pack.

Allow a minimum of 10 pounds of oats per day for each horse. Complete pelleted horse feeds

also are available and are suited to packing trips. If horses are allowed to rest and graze for an hour a few times during the day, less feed will have to be packed. Hobbles and a picket rope are essentials.

Equipment needed will be determined by the length and purpose of the pack trip. A checklist to be used as a guide follows:

#### Personal gear

first aid kit  
pocket knife  
camera  
binoculars  
matches  
facial and toilet tissue  
medicines, if regularly taken  
thermos  
gloves  
flashlight  
bedroll  
extra clothing

#### Camp equipment

tent  
tent poles, if needed  
camp stove  
shovel  
axe  
dish soap and hand soap  
dish and hand towels  
cooking pots  
skillet  
knives, forks, spoons  
plates, bowls, cups  
can opener  
matches  
candles  
lantern

1. Using the Menu Plan on page 3, plan the menu well in advance.
2. Make a shopping list.
3. Buy the food.
4. Pack the food.



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**Consider the following as you plan your menus:**  
 Balance: Each daily menu should meet the food pyramid guidelines.

Amount: Carefully figure the amounts of each food to buy so each rider will get enough.

Keeping qualities: The food must keep well at daytime temperatures.

Canned and dried foods and some fresh fruits and vegetables, hard cheeses (cheddar, Swiss, American), hard-cooked eggs in the intact shell, and peanut butter keep well.

Bacon and ham prepared by today's methods do not keep well without refrigeration. (Country-cured, very salty products of yesteryear had good keeping qualities.)

Weight: If all the gear is to be carried on your horse, then including light weight foods—primarily dried foods—will be an important consideration.

<b>Suggested Foods</b> (Add Other Foods)	
<p><b>Milk, yogurt, and cheese</b>  <i>Under 10 years of age: 3 glasses</i>  <i>Teenagers: 4 glasses</i>            dried milk (1/3 cup = 1 cup fluid milk)            evaporated canned milk            hard cheeses            instant pudding</p> <p style="text-align: center;"><b>Vegetables</b>  <i>4 servings daily</i>  <i>(1 vitamin C-rich;</i>  <i>1 vitamin A-rich)</i>            dried potatoes            fresh carrots, potatoes, onions            winter squash            canned vegetables</p> <p style="text-align: center;"><b>Fruits</b>  <i>3 servings daily</i>            canned fruits, apples, oranges            raisins, grapes, berries</p> <p><b>Breads, cereals, rice &amp; pasta</b>  <i>9 servings daily</i>            oatmeal            macaroni, spaghetti            bread</p>	<p style="text-align: center;"><b>Meat</b>  <i>2 servings daily, 6 oz. total</i>            canned meats            (bacon, ham, tuna, chicken, liver, corned beef):            allow 2 to 4 ounces per serving            canned beans            canned or dried main dishes            eggs (fresh or powdered)            peanut butter            nuts            jerky</p> <p style="text-align: center;"><b>Extras</b>            canned or dried soups            sugar            jam            syrup            powdered drinks*            salt and seasonings            catsup            mustard            margarine</p> <p><small>*Some provide vitamins A and C, which often are lacking in camping rations.</small></p>

<b>Sample Menus</b>	
<p style="text-align: center;"><i>Breakfast</i></p> <p>instant oatmeal (mixed with dried milk)—add boiling water            hard-cooked egg            hot powdered citrus drink</p> <p style="text-align: center;"><i>Lunch</i></p> <p>soup            cheddar cheese            bread (2 slices)            apple            powdered drink</p>	<p style="text-align: center;"><i>Dinner</i></p> <p>stew            (canned meat and tomatoes, carrots, potatoes)            bread            instant vanilla pudding (add dried milk and water)            mixed with canned peaches            cookies            water or lemonade</p> <p style="text-align: center;"><i>Snacks</i></p> <p>salted nuts            dried fruits</p>

Prepared by Judith Forrest, former Extension food and nutrition specialist, Oregon State University.

## Menu Plan

	<i>Saturday</i>	<i>Sunday</i>
<i>Breakfast</i>		
<i>Lunch</i>		
<i>Dinner</i>		
<i>Snacks</i>		
	<i>Monday</i>	<i>Tuesday</i>
<i>Breakfast</i>		
<i>Lunch</i>		
<i>Dinner</i>		
<i>Snacks</i>		
	<i>Wednesday</i>	<i>Thursday</i>
<i>Breakfast</i>		
<i>Lunch</i>		
<i>Dinner</i>		
<i>Snacks</i>		
	<i>Friday</i>	
<i>Breakfast</i>		
<i>Lunch</i>		
<i>Dinner</i>		
<i>Snacks</i>		



# Shopping List

Food	Number of Times on Menu	Amount to Buy



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