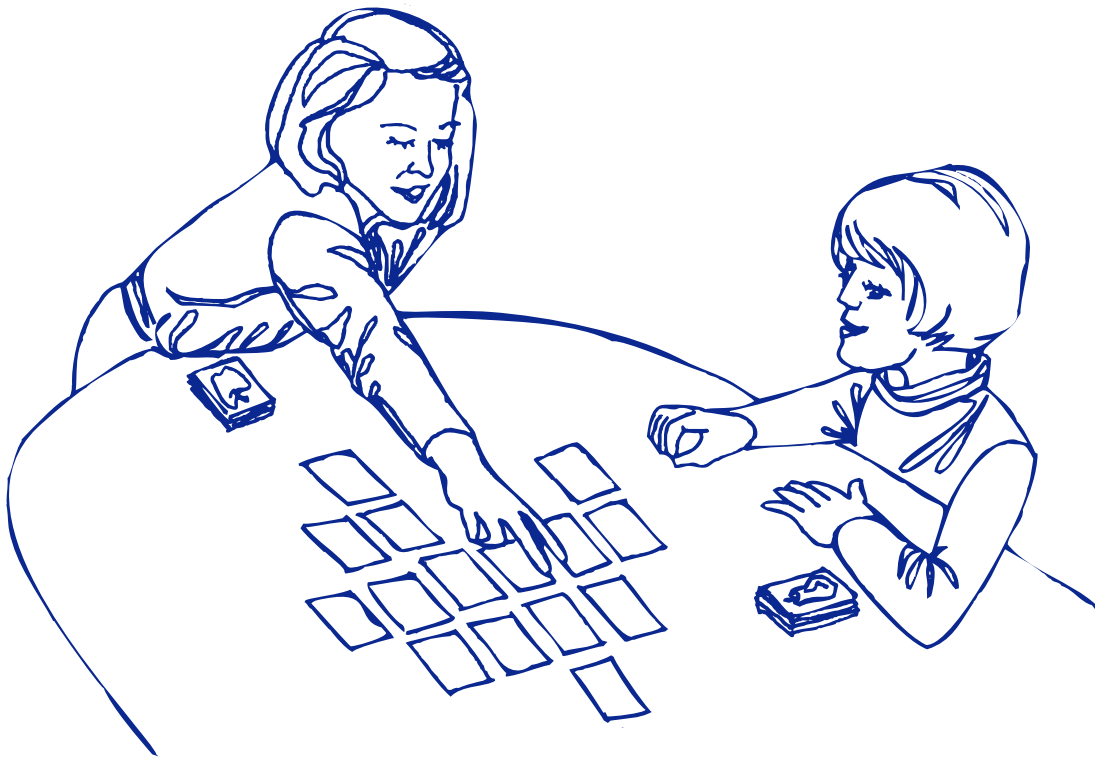


# GAMES THAT TEACH



Learning by Doing  
For  
Preschoolers with PKU

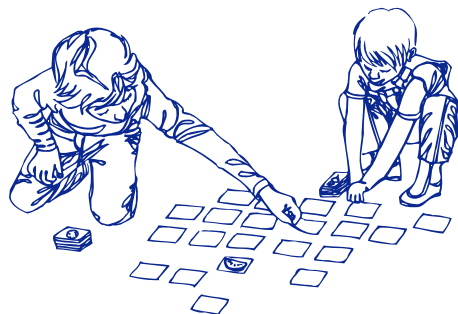
## Dear parents,

Up until this time you've been managing your very young child's diet and all is going well. Now as your child grows older and becomes more independent, your child is visiting friends, going to preschool or kindergarten and needs to understand the diet for PKU. Your child needs to know the foods that are 'yes' or 'no' foods. Your child also needs to know the amounts of foods that are appropriate so that good food choices will be made away from home. Children must be educated to make appropriate food selections. Foods habits which build good health are not intuitively acquired, they must be learned both by observation and experience.

There are many benefits beyond PKU diet management for working with your child on food related educational activities. In a list these benefits are: emotional and social development, language, science, art and motor skills as well as physical development, social studies, mathematics and courtesy. Children learn most effectively by being actively involved, therefore, children should be encouraged to be interested in food and involved in its preparation.

Children are curious and like food. These two aspects of childhood can help children begin to understand their relationship to the world around them. Children can discover much about themselves through food. Creating something both beautiful and nourishing with food is a rewarding experience for anyone.

This booklet is designed to help you teach your child the diet for PKU in a fun way! Not only will your child enjoy playing the games and activities, but helping to make them is as much fun as playing them, especially if everyone in the family takes part. All were tested with a high degree of success at our model preschool for children with PKU. The games and activities can be started very simply for younger children and more complex choices can be included for older children. We know that you will enjoy them as much as we did.



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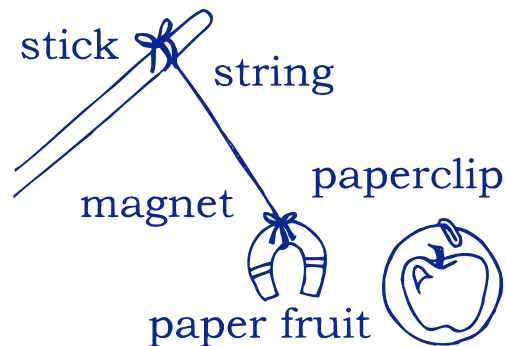
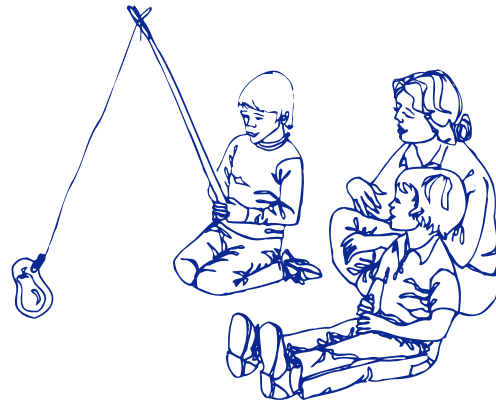
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# FISHING for FRUIT

*For ages 2 1/2 to 6 years*

**Objective:** To learn the names of fruit (and other foods) and to recognize them as 'yes' or 'no' foods.

**Materials:** One small magnet, stick or dowel about two feet long, magazines, cardboard, scissors, paper clips and a string about three feet long.



Ask: "What is this?"

Reply: "An apple."

Ask: "Can you eat this"

Reply: "Yes!"

**Method:** Cut pictures of fruit from magazines and paste on cardboard. Cut the cardboard to fit the shape of the fruit. Put a paper clip on each item of fruit. Tie the string to one end of the stick, at the other end of the string tie a small magnet.

Put the pictures in a big pan or bathtub and have the child 'fish' for the fruit. Other foods can be included in this game, too.

# EXPERIENCING an APPLE

*For ages 2 1/2 to 6 years*

**Objective:** Children will experience (by feel, sight, taste and smell) the properties of a wide variety of foods.



**Materials:** medium sized basket, small paring knife, water, bowl, cutting board, scale, small, medium and large apples (or other fruits or vegetables) Apple choices could be: Rome Beauty, Jonathan, Golden Delicious, Red Delicious, Granny Smith.

**Method:** Wash apples well, put in the basket. Ask some of these questions about the apples or other foods. Why do we wash apples before we eat them? (To remove dirt, bacteria, pesticides) What color are the apples? (Red, green, yellow) What shape are the apples? (Round, pear-shaped) What sizes are the apples? (Small, medium, large) Weigh the apples. Which apples are heavy, which are light? How many grams does each apple weigh? How do apples smell to you? (Sweet, sour) How do apples feel to you? (Hard, smooth, waxy) How do apples taste to you? (Sweet, sour, tart, bland) How do apples sound when we eat them? (Quiet, loud, crisp, crunchy) What covers the apple? (Peel) Does the peel have a different taste than the pulp inside? What are the other parts of the apple? (Stem, blossom, core, seeds) What color are the apples on the inside? (White, pale yellow) Into what shapes and sizes can we cut apples? (Halves, quarters, thirds, circles, cubes, shreds) Is an apple juicy or dry when cut?



Why are apples good us to eat? (They taste great, give us energy, help keep our bodies in good condition, clean our teeth, keep our gums healthy, are low in phe) What can we make with apples? (Applesauce, applejuice, applecider, apple vinegar, apple butter, applejelly, dried apples, baked apples, fresh apple wedges) What about? (Apple salad, apple applesauce cake, apple crisp, pudding- all low pine, of course) How do like apples best?

This activity can be effectively used with a wide variety of foods; some that are new to your child as well as to provide a 'new look' at favorite foods.

# VEGETABLE GRAB BAG

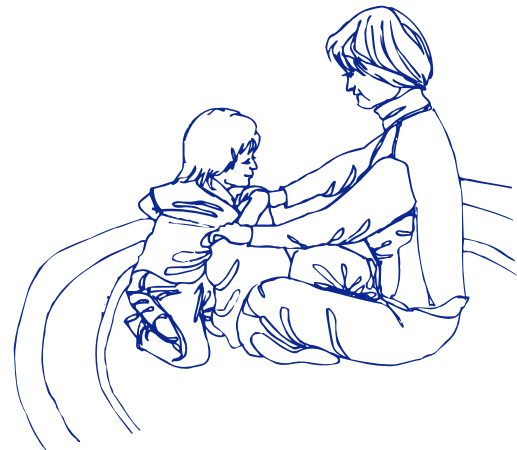
*For ages 2 1/2 to 6 years*



**Objective:** To learn the names of vegetables and to recognize them as "yes" foods!  
**Materials:** old pillow case, grocery bag or other large bag, raw vegetables, such as cauliflower, green beans, tomatoes, carrots, celery, broccoli, artichokes, asparagus, zucchini, turnips, eggplant, potatoes, radishes, beets, onions, mushrooms, lettuce, spinach, cabbage, kale, cucumber, peppers, squash or rutabaga.

**Method:** Place 4 or 5 vegetables in the bag. Close the bag, allowing enough room for a small hand to slip in. Ask each child to insert a hand, pick a vegetable and name it. Ask: "Is this a 'yes' food?" The vegetable must be returned to the bag if the answer is wrong (allow time for the child to guess). This is fun game for neighborhood friends to play too!

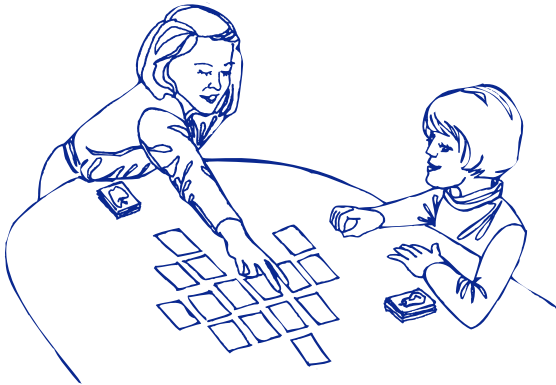
Pictures cut from magazines and pasted on cardboard can be used as well --but--there is something special about smelling and feeling real vegetables. Later, for a snack, tasting the 'newly learned' vegetable is also great fun. If your child gets 'too good' at the game, have the child name the vegetable by 'feel' (without looking).



# MEMORY GAME

*For ages 4 to 6 years and for two or more players.*

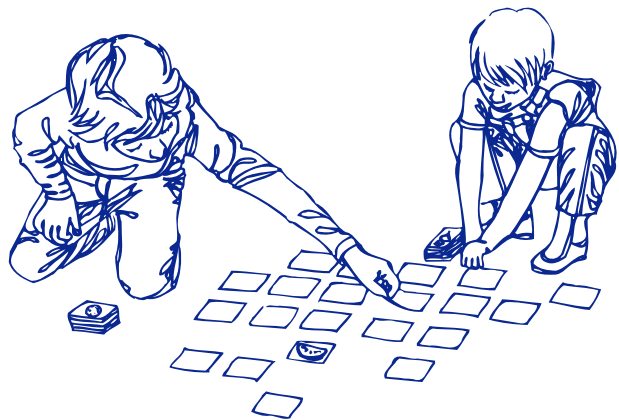
**Objective:** To reinforce 'yes' foods; to improve concentration and memory.



**Materials:** Take snapshots or find pictures in magazines of your favorite foods. Be sure to include lots of fruits and vegetables. Have two pictures of the same item.

(If you have taken snapshots, have them developed in duplicate. If you are using pictures from magazines, have a friend save the issue for you.) To have a good game, have pictures of at least 15 to 20 different foods. Paste each picture on a cardboard square ( 1/8" thick) and let dry.

**Method:** Put the pictures face down on a table in random order. Be sure that they are well mixed up. Each player, in turn, turns over two pictures at a time, trying to match pictures. If the player picks up two unmatched pictures, they are put back, face down in the same location. If a player turns up two pictures that match, the matching pictures are removed from the game and another turn is taken. The winner is the player who finds the most pairs.



# CEREAL,

## HOW MUCH IS O.K.?

*For ages 3 to 6 years*

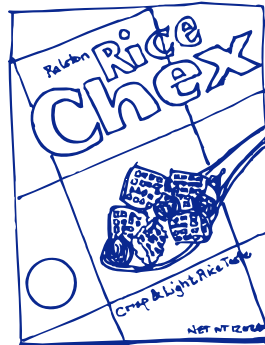


### **Objective:**

To learn the names of 'yes' cereals; to learn how much can be eaten.

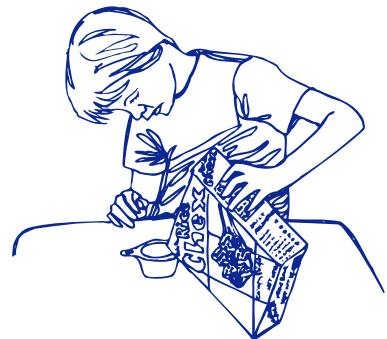
### **Materials:**

Five cereal boxes (different kinds and preferably ones the child eats and likes),  $\frac{1}{2}$  cup,  $\frac{1}{3}$  cup and  $\frac{1}{4}$  cup measuring cups- each of a different color (either painted with enamel paint, or a multicolored set), construction paper the color of the three measuring cups and a bowl.



### **Method:**

Cut construction paper circles the color of the measuring cups (such as  $\frac{1}{2}$  cup = red,  $\frac{1}{3}$  cup = blue and  $\frac{1}{4}$  cup = yellow). Glue the circles to the cereal boxes that are appropriately measured by the cup-color.



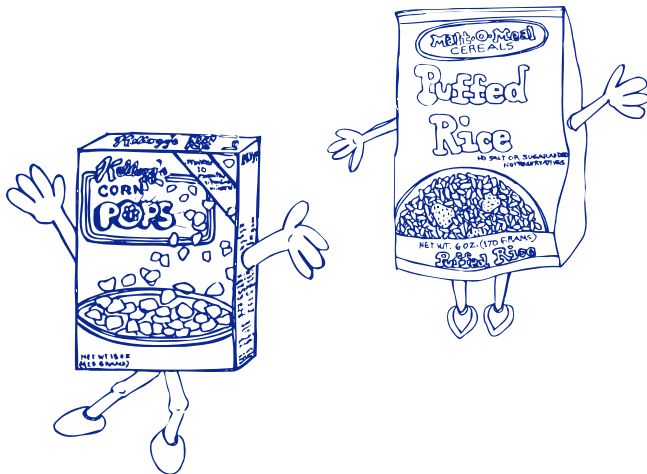


From the picture and the box the child should learn to:

- a) Name the cereal;
- b) Identify (by color) which cup to use to measure the cereal;
- c) Measure the cereal from the box by learning to level the cereal in the cup rather than to overflow it.



This game can be played in a fifteen minute session set aside for it. It can also be played each morning at breakfast. Use one box at a time and let your child measure the amount of allowed cereal into the bowl.



For example:

Ask: "Which cereal is this?"

Reply: "Rice Chex!"

Ask: "How much can you eat?"

Reply: "This much!"

Measure the cereal into the bowl and eat it! Cereals which are fun to learn, good to eat and moderate in sugar content include:

**Rice Chex**  
**Corn Chex**

**Rice Krispies**  
**Puffed Rice**

**Kix**  
**Puffed Wheat**

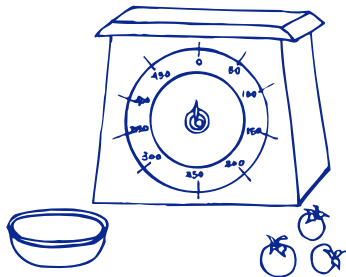
# LEARNING to USE a SCALE

*For ages 5 and Older*

**Objective:** To learn to weigh foods appropriately.

**Materials:** Gram scale, light plastic dish or cup, raw rice, dried red beans (or other easily weighed, non-edible food items) apple, orange or banana.

**Method:** First show your child the scale and its parts.



**Ask:** "What is a scale?" It is a tool used to measure the amount of something) Ask: "How does a scale work?" (The scale has a dial on the front. When you put something on the scale, the dial shows you how much that something weighs) Point out the parts of the scale. (Tray, pointer, dial, numbers) Then weigh some foods on the scale.

1. Place the scale on a table. Be sure that your child can crouch or bend down so that the eye is on the same level as the scale.
2. Set the pointer of the scale at 0.
3. Place a small plastic bowl or cup on the tray of the scale.
4. Set the pointer of the scale at 0 again. This is called taring the scale.
5. Decide how much of something you want your child to weigh. Try 10 grams, 50 grams, or 100 grams of raw rice. Have your child place the food in the dish or cup. Show them how to add a bit or take a bit out to get exactly the weight desired. Show the child the number on the scale and that the dial moves as weight is added or subtracted from the dish. Repeat the taring and weighing process with other foods. Try 25 grams, 75 grams, or 150 grams of red beans.

**Ask:** "Which is more, 50 grams of something or 100 grams of something? Which is more, 10 grams of something or 50 grams of something? Which is less, 10 grams of something or 100 grams of something?"

**Ask:** "What other foods might we weigh?" (Cereal, broccoli, potatoes, rice, bananas, etc.)

6. Weigh some foods to see how much they weigh. Weigh an apple. Show your child that the pointer is a 0 before you start since you do not need to use a dish or cup with a whole food like an apple.

**Ask:** "How much does the apple weigh?" Show your child how to read the number indicated by the pointer. Try an orange, a banana, a potato. Once you child is competent and comfortable with the scale, have your child weigh foods for meals and snacks.

# PKU LEARNING GAME

*For ages 4 to 6 years*

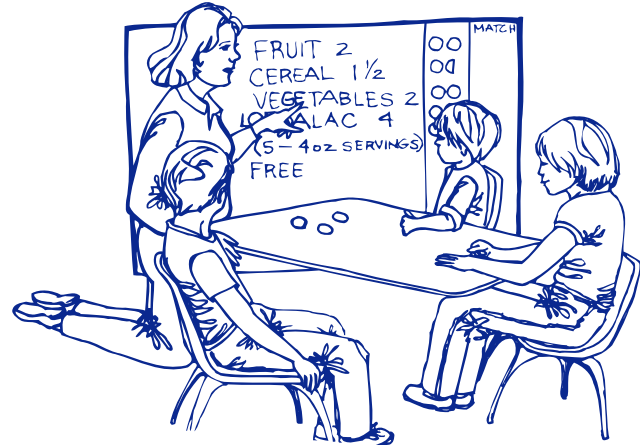
**Objective:** To learn the amount of food to eat each day

**Materials:** Five colors of felt, felt board and felt pen

**Method:** Cut out 15 disks in each color of felt. Make a felt board and label it to equal the prescribed 'pine equivalents' in the food pattern.

**For example:**

Fruit: 2 equivalents or servings  
Cereal: 1 <sup>1</sup>/<sub>2</sub> equivalents or servings  
Vegetables: 2 equivalents or servings  
Lofenalac or Phenyl-free: 4 glasses  
(For example: 20 oz., 5 oz. each serving)



**Assign a color to each food group**

For example: Fruit = Orange, Vegetable = Green, Cereal and breads = Brown, Lofenalac = White, Free foods (optional) = Pink

As your child eats foods throughout the day, have your child match the appropriately colored disk with the felt picture on the board. If your child eats 1 cereal equivalent at a meal, one brown disk should be placed on the right side of the chart. In this way your child can learn how many servings of each food group are allowed each day.

If your child does not drink equal amounts of Lofenalac or Phenyl-free throughout the day, draw a picture of the container in which you mix the formula. During the meal or snack have your child attach felt strips equal to the amount of formula that has been consumed.

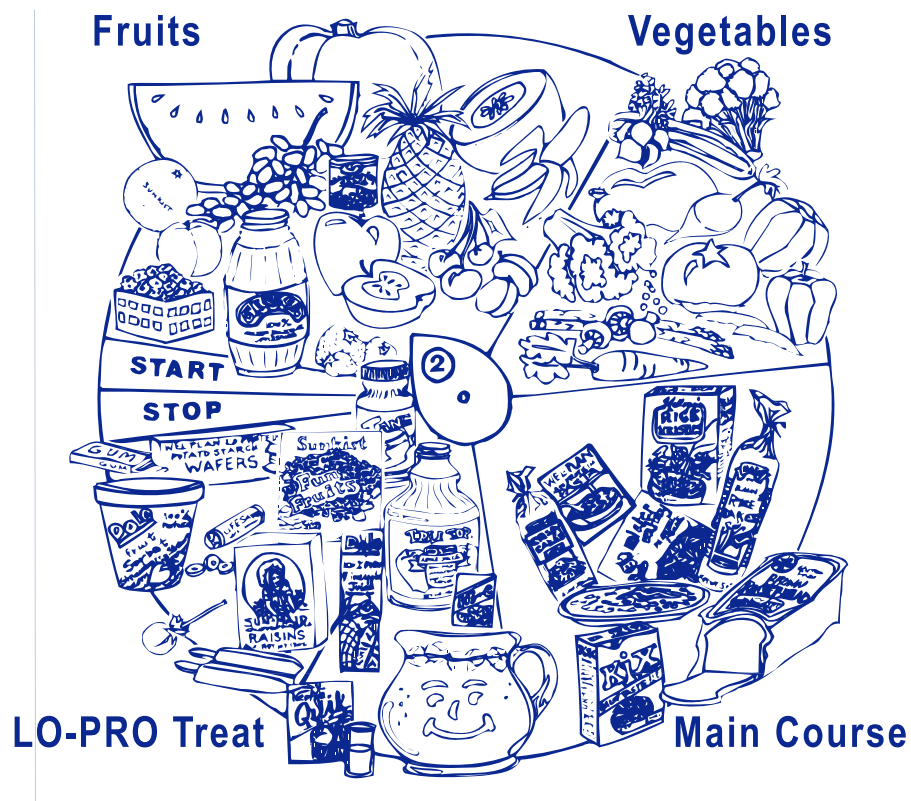
This game could also be played with poker chips, but it is more difficult to show the whole day's intake without a chart

# 'I can PLAN my own LUNCH'

## MEAL WHEEL

*For ages 5 and older*

Helping children to make appropriate decisions for themselves is an important developmental task. Preparing a snack or packing a lunch provides opportunities for decision-making. The meal wheel can be easily adjusted to suit your child's food preferences, appetite and skill level.



The child who makes his own 'I Can Plan My Own Lunch' Meal Wheel and is supervised in using it will begin to understand how 'yes' foods and 'measure carefully' foods are used to plan a meal.

### **Objective:**

The child will be able to choose the appropriate number of servings from the meal wheel categories to plan a low phe and nourishing lunch.

### **Materials:**

Cardboard circle about 8" in diameter or a sturdy paper plate, paper fastener, arrow-shaped dial cut from cardboard or sturdy paper, colored pens for labeling the meal wheel, colored pictures of favorite foods and glue.

### **Method:**

**A)** Preparation of the meal wheel. Divide the cardboard circle or paper plate into 6 approximately equal sections. Divide one section in half (see diagram). Using pens, label the sections beginning with **START**, then **FRUITS**, **VEGETABLES**, **MAIN COURSE**, **DRINK**, **LOW PHE TREAT**, **STOP**. Label the dial '**CHOOSE**' on the pointed tip and '**I CAN PLAN MY OWN LUNCH**' on the lower portion. Have your child list favorite foods in each of the categories either by gluing pictures of foods or by writing the names of foods. The number of servings listed in the 'window' of the arrow for each category of foods depends on your child's preferences, appetite and tolerance for phe. In our experience, the needs of most of the children were satisfactorily met with the following pattern:

**Fruits:** 2 servings

**Vegetables:** 2 servings

**Main Course** (such as low protein sandwich, tortilla, soup, or pasta): 1 serving

**Drink** (Special milk, apple juice, other fruit Juices): 1 serving

**Low Phe Treat** (low protein graham crackers or cookies or prepackaged dried fruit beats): 1 serving

**B)** Teaching your child to use the meal wheel. At first choose a relatively quiet time of day prior to an occasion which requires a lunch. Assist your child in beginning with the dial on **START**, then move the dial to **FRUITS**. Discuss which fruits are available as choices. After a younger child has chosen, prepare an appropriate amount of the fruit. Work with an older child to prepare the fruit servings. Then follow the same procedure for **VEGETABLES**, **MAIN COURSE**, **DRINK** and **LOW PHE TREAT**. Most children find it comfortable to have a lunch that is 'much the same' every day for a number of weeks and then change to another lunch pattern which they like repeated for a time. This tendency makes it easier for children to become competent in self-help skills and monitor their own phe intake. So, help your child 'give it a whirl', let the meal wheel be the guide!

# MAKE your own 'MILK'

*For ages 5 and older*

**Objective:** To learn to independently prepare Lofenalac or Phenyl-Free. Children who are responsible for their own management and have adequate self-help skills for age are more confident and more likely to see themselves as the 'major manager' of their own blood phe levels.

The mastery of the task of preparation of Lofenalac or PhenylFree can be done in several steps based on the age and skills of the child. .

The steps your child should master in increasing order of difficulty are:

- 1) push the bleeder button;
- 2) add the premeasured water to the blender;
- 3) measure the water;
- 4) measure or weigh the formula powder;
- 5) perform all of the above steps with supervision and assistance; and
- 6) perform all of the above steps with supervision but without assistance.



# TAKE A LOOK...

## IT'S in a BOOK!

Reading to and working with young children are fun and worthwhile educational activities for both parents and children. Your family bookshelf and the local public library have a wealth of resources that can be used to teach young children about wellness, nourishment, activity and positive feelings about food. The books listed below are only a few of the many books available that can easily 'fit' into a parents or teachers approach to PKU education.

**For the very young child:** these books illustrate 'yes' and 'no' foods.

*At the Table*, Price/Stern/Sloan Publishers, Inc., Los Angeles, CA, 1981. Hard pages, brightly colored pictures of foods, table and toothbrush.

*Let's Eat*, Gyo Fujikawa, Zokeisha Publications Ltd., Tokyo, Japan, 1975. Hard pages, pictures of children and animals eating a wide variety of foods.

*A Little Book of Numbers*, Simon and Schuster, 1980. Hard pages, counting fruits and vegetables.

**For preschoolers:** these books present a wider variety of situations and choices.

*The Very Hungry Caterpillar*, Eric Carle, Scholastic, Inc., New York.

*Richard Scary's Best Storybook Ever*, Richard Scary, Golden Press, New York, 1968. 'The New Day', 'Feeding Big Hilda Hippo Her ABC's', 'On the Farm' and other stories which illustrate family roles, choosing foods and sources of foods.

*The Early Bird*, Richard Scary, Random House Publishers, New York, 1968. Family routines, childhood activities and sharing with friends are illustrated.

*Babar Learns to Cook*, Laurent de Brunhoff, Random House, New York, 1978. A family takes cooking lessons and learns about kitchen safety.

*Arthur's Eyes*, Marc Brown, Avon Books, New York, 1979. A child and his friends learn about individual differences.

**For kindergarten and primary grade children:** these books help children to think about how our bodies use food, why we choose foods as we do and dealing with friends.

*The CareBears' Party Cookbook*, Jan O'Connor, Random House Publishers, New York, 1985. 'No cook, no bake' recipes, many appropriately low in fat.

*The Cookie Monster and the Cookie Tree*, David Korr, Western Publishing Co., 1980. Sharing and decision making styles are presented.

*Tales of Oliver Pig*, Jean Van Leenwen, Dial Press, New York, 1979. 'Baking Day', 'A Bad Day' and other stories of family life.



*Little Bear*, Else Holmelund Minarik, Harper and Row Publishers, New York, 1977. 'Little Bear's Wish' and other stories of self-discovery and acceptance.

*Frog and Toad Together*, Arnold Lobel, Harper and Row Publishers, New York, 1979.

'Cookies' and other stories about values and self-control.

*Your First Garden Book*, Marc Brown, Little, Brown and Co., Boston, 1981. Wonderful gardening and food related activities, such as, 'Grow a Salad' and 'The Glorious Garbage Garden'.

*The Big Book of Recipes for Fun: Creative Learning Activities for Home and School*, Carolyn Buhai Haas, CBH Publishing, Northfield, IL, 1980. Crafts, games, recipes, and activities, including a unit on weighing and measuring.

*Creative Food Experiences for Children*, Mary T. Goodwin and Geny Pollen, Center for Science in the Public Interest, Washington, D.C., 1980. Songs, games and activities related to wellness and nourishment.

*How we are Born, How we Grow, How our Bodies Work and How we learn*, Joe Kaufman, A Golden Book, New York, 1975. Just what the title says with wonderful illustrations.

### **And, of course, magazines:**

*Sesame Street* (for ages 2 to 6) P.O. Box 2895, Boulder, CO. 80321.

*Electric Company* (for ages 6 and over) 200 Watt St., P.O. 2923, Boulder, CO. 80321.

*Highlights for Children*, P.O. 269, Columbus, OH 93216.

*Penny Power*, Consumers' Union, P.O. 2878, Boulder, CO. 80322.

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Illustrated by Teresa Strom

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