Nutrition Handbook

BY

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FOREWORD

This handbook is written for health workers, teachers, and local community leaders, and will serve as a guide in methods of procedure and in subject matter. Where trained health and nutrition workers are employed the full health and nutrition program, as herein outlined, may be undertaken; otherwise only parts of the program may be chosen and undertaken as desired.

One third of our school children are below average weight for height, and a large per cent are growing up in a poor state of nutrition and health, and since it is poor economy to attempt to train the physically unfit it behooves our educational system to place more emphasis on positive health instruction for all children as a definite part of the school program.

For suggestions on methods and subject matter the writer desires to make special acknowledgement to the following: Miss Lydia Roberts, Associate Professor in Nutrition, University of Chicago; Dr. Hoffman, Head of Child Welfare, Chicago, (with both of whom the writer has some special training); and for helpful criticism to Dr. Caroline Hedger, Elizabeth McCormick Memorial Fund, Chicago, and to Dr. Hazel Boness of Montana State Board of Health. Use has also been made of recent publications by Dr. William Emerson, Tufts College Medical School, Boston, “Nutrition and Growth of School Children;” Hunt, Johnson and Lincoln, “Health Education and the Nutrition Class.”

The Meaning of Malnutrition

Malnutrition is faulty nutrition. It is not a disease in itself but a low condition of health and body resistance, a symptom which may result from any one of many causes.

The Danger of Malnutrition

The growth is stunted, there is danger of anemia, nervousness or severe nervous disorders; as a child, such a person is a drain on his associates; as an adult, he becomes handicapped because of low vitality and poorly developed body, and is often inefficient and unable to perform his share of the world’s work. One of the most serious results of malnutrition is shown in the increased susceptibility and lack of resistance to disease. The malnourished child is
much more apt to contract the different children's diseases because his body lacks the proper resistance. Because of this lack of resistance the case is apt to be a more serious one and the patient is apt to recover less rapidly. The increase of tuberculosis among school children, particularly in larger cities, is alarming. Malnutrition makes the child less resistant to tuberculosis, and the disease, once started, increases the degree of undernutrition.

There is also a close relation between malnutrition and backwardness in school. As a rule the malnourished child has less power of concentration and attention and the brain does not work as efficiently. (There are, however, exceptions to this rule.) Dr. Tregold, one of the leading authorities on mental deficiency, believes it possible for malnutrition to be so severe and prolonged that a degree of mental deficiency may be produced.

Some Signs of Malnutrition

1. Underweight for height (7% below average) or 20% above average weight for height.
2. Failure to gain at the normal rate for a definite length of time.
3. Pale, wax-like or earthy colored skin.
4. Dark circles under the eyes.
5. Mucous membrane inside eyelids and in mouth pale and colorless.
6. Hair rough, like that of farm animals poorly cared for.
7. Coated tongue.
8. Flabby muscles.
9. Fatigue posture—round shoulders, wings," flat chest, protruding stomach, bent knees, flat or fallen arches.
10. Decayed teeth, diseased tonsils, adenoids, etc.
11. Expression of eyes and entire face dull and listless.
12. Listless in work and in play—tires easily.
13. Lacking in mental vigor and power of concentration and attention.
15. Finicky about food.

The Causes of Malnutrition

A. General Causes
1. Ignorance
2. Poverty
3. Lack of home control.

B. Specific Causes

1. Faulty diet
   (a) Insufficient food
       (1) Not enough milk
       (2) Not enough vegetables and fruit
       (3) No breakfast or too small an amount due to lack of hunger or lack of time.
       (4) Unpalatable food
       (5) Hurried meals on account of too short luncheon period and eagerness to play
       (6) Indiscriminate eating between meals—candy, etc.
       (7) Restricted food supply on account of poverty and lack of knowledge and appreciation of food values
       (8) Petty food dislikes
   (b) Bad food habits
       (1) Irregular meals
       (2) Bolting food
       (3) Eating between meals
       (4) Washing down food with liquid
       (5) Coffee or tea
       (6) Indiscriminate eating of candy, or sweets of any kind
       (7) Unsuitable food—excessive use of fried foods, hot breads, rich pastry, highly seasoned foods, etc.

2. Faulty Hygiene
   (a) Too little sleep
       (1) In bed too late because of
           a. Movies
           b. Evening parties
           c. Desire to stay up
           d. Reading in bed
           e. Late work
           f. Home study
       (2) Up too early
a. To work (newspaper route, etc.)
b. To conform to father’s work

(b) Too little fresh air
(1) Windows closed at night
(2) Too many sleeping in same room
(3) Out doors too little because of
  a. No regular schedule for play
  b. No place to play
  c. Music and dancing lessons
  d. Home study
(4) Unventilated or poorly ventilated rooms

(c) Constipation

(d) Over exercise
(1) Too hard work
  a. Factories
  b. Farm homes
(2) Too hard play (athletics — school contests, games, swimming, entertainment, etc. in excess)

3. Defect and Disease
   (a) Bad tonsils
   (b) Adenoids
   (c) Bad teeth, due to
      (1) Improper diet
      (2) Lack of care
   (d) Tuberculosis, due to
      (1) Infection
      (2) Malnutrition
   (e) Other toxins and diseases

Weight as a Standard of Nutrition

Weight is an important measure in judging nutrition since the body height requires a certain weight to support it, but it should not be considered the only standard. Weight as a standard of nutrition has been over-emphasized and not enough attention has been paid to the other standards of health (see health score card) for the normal, healthy individual. The majority of height tables now in use are too low. Then, too, we must take into consideration the breadth of the shoulders and chest, the size of the bones, etc.
Suggested Health Program to be Carried Out by the Community

1. Have a thorough physical examination of all school children by a competent physician at the beginning of the school year with follow-up examinations for special cases.

2. See that all physical defects so far as possible are corrected.

3. Encourage organized nutrition and health work as a definite part of the school program.

4. Encourage organized nutrition and health work for the child of pre-school age.

5. Encourage the purchase of scales in every community where it is deemed advisable.

6. Encourage all community and civic organizations in the county to use their influence:
   (a) To obtain efficient nutrition and health workers (Home Economics teachers, Home Demonstration Agent, a county or school nurse, a county health officer, etc.)
   (b) To obtain necessary county funds to be used for needy cases (for correction of physical defects, for buying milk, etc.)
   (c) For the enforcement of such laws as the pure food laws, the quarantine law, the curfew law, etc.
   (d) To establish the hot dish at noon in school where it is deemed necessary and advisable.
   (e) To encourage the carrying of milk to school, especially if it is impossible to serve a hot dish at noon.

*The following scales have been used with success in Montana:
   The DeLuxe Scales, Chicago Scales Company. Price $29.50
   The Continental Portable Scale with measuring rod and separate carrying case. Continental Scales Co. 2124-26 W. 21st Place, Chicago, Price .... .... .... .... .... .... .... .... .... $39.75
How to Measure

The measuring must be done very accurately, for even a very small error in height will make quite an error in determining the average weight.

To take accurate measurements:

1. Remove shoes, ribbons, combs, etc.
2. Stand straight with heels, shoulders, and head in a perpendicular line. Put heels together against the wall. Have head, shoulders and hips touching the wall. Stand with chin perpendicular to the shoulder line, arms at sides.

The most common methods for taking measurements:

1. Tack a new tape line to a flat surface, wall or door. Put in a sufficient number of tacks to hold the tape line firmly in place.
2. Fasten two light weight pieces of wood together to form a right triangle. To measure, have the one flat surface flat against the wall, and the other surface resting on the child's head. Take reading on tape line. (A book may be used if the long edge of the book is placed perpendicular against the wall and the short edge will then be level and should rest on the child's head.)

How to Weigh

Be sure that the scales balance properly before the weighing is begun. Weigh small children under four without clothing. For children remove coats, sweaters, leggings, boots, shoes, etc. Have pockets free from weight.

Have child step gently onto the center of the platform and face the scale indicator, stand with feet together, arms at sides.

Method for determining the amount above or below average weight:

1. Obtain a record of child's height and weight.
2. Consult the height and weight table. Find height corresponding to child's height and take the corresponding weight for that height to find the number of pounds above or below average weight. (Age is not a factor in determining height for weight.) See table for finding per cent above or below the average weight.
Directions for Conducting Nutrition Work in Schools Where There Are No Trained Health Workers to Assist in the Work

1. Weigh all the children each month (on the same day of the month at the same hour of the day.)
2. Measure all the children at the beginning and at the end of the school year.
3. Give out each month the weight tags which are to be taken home to the parents and returned to the teacher next day. (These tags may be secured from the Home Economics Extension Department at a cost of $5 per thousand).
4. Check up on the food and health rules once a month (see page ). Attempt to stimulate further interest in health through the discussion of these rules at least once a week.
5. Place the gold star or merit seal of deserving pupils on the honor roll.
6. Teach one of the series of food and health lessons in connection with the work in hygiene.

Directions for Conducting Nutrition Work in Schools Where There ARE Trained Health Workers (Home Economics Teachers, Home Demonstration Agent, and School or Public Nurse) to Assist in the Work

Use the health score to score each child if possible. (This score card may be omitted and only the Health and Nutrition summary sheet used.)

Summarize the health of each child on the health and nutrition summary sheet. This summary sheet is to be left in the room in which the summary is made. (The use of the health score or summary sheet does not call for a diagnosis of any case except by a physician. Deviations from the normal health standards are noted on the summary sheet by the health worker, and if medical examination is considered advisable the parents should be notified by the health worker.)

The children should be weighed every month (weight tags sent home to parents) and measured at least two times a year.
Use the nutrition class weight chart. Plot the weight summary for each month. (The brownie health ladder may be used in the lower grades instead of the weight charts.)
5. Check on the food and health rules once each month. Discuss these rules at some period each week.

6. Place the gold star or merit seal of deserving pupils on the honor roll.

7. Teach one of the series of food and health lessons at least once a month.

Health Program for Special Cases of Malnutrition

1. Have a thorough examination by a competent physician. (The parents should be present.)

2. Correct all physical defects—diseased tonsils or adenoids, defective teeth, defects of vision or hearing, etc.

3. Go to bed early (8 o'clock or earlier) every night. Take at least eleven hours of sleep.

4. Eat three good meals a day at regular hours. Eat slowly—take at least twenty minutes for each meal. The meals should contain some whole grains every day in bread or in cereal, an abundance of vegetables raw and cooked, (particularly green vegetables) fruit (particularly oranges to create an appetite—as may as six may be given each day in stubborn cases of malnutrition), and at least one quart of milk (only very small amounts of meat or eggs are needed.) Special attention should be given to the diet of children having certain organic disorders, such as appendicitis, diabetes, hernia, kidney trouble, etc., and these cases should be under a competent physicians care.

5. Drink no tea, coffee, or coca cola, etc. Weak cocoa may be given in moderate amounts.

6. Take mid-morning lunches—graham crackers and milk or fruit, but no sweets or trash (if these lunches do not interfere with the appetite for regular meals or do not cause discomfort).

7. Drink an abundance of water—4 to 6 glasses a day.

8. Have at least one or two hours of rest at some time during the day (at noon or after school) with clothing loosened, shoes removed, lying flat on the back with a pillow under the shoulders. (This helps also to overcome the fatigue posture.)
9. Shorten the school hours if possible, or give up school entirely until health is regained. Give up all outside activities—dancing, music, contests, special entertainments, etc.

10. Take little very vigorous exercise until weight is normal. (Strenuous games, swimming in cold water, etc.)

11. Spend as many hours as possible in the fresh air. Have an abundance of fresh air at night—winter and summer.

12. Have at least one hot dish at noon (a combination or milk and vegetables is best.)

Lesson I.
The Meaning of Health

Object of the lesson:

To interest the children in health work and to arouse a desire in them to do the things that will help them to grow strong and healthy; to show what a healthy boy and girl should look like.

Method:

1. Show pictures of a good healthy child and a skinny sick looking child.

2. Ask the children which they would choose for their games, (baseball, football, tug of war, etc.) What can skinny, sickly boys and girls not do? Ans. They can not play hard games. They get tired too quickly. People in good condition can do almost anything.

Which of the children will have the better disposition? Which one is apt to get sick most quickly?

Which of these children looks better? Why? (In our health lessons we are going to learn how to become healthy children so that we will be more apt to grow up to be strong healthy men and women.)

Some of the signs that help to determine whether or not a child is really healthy:

A normal healthy child should have:

1. Good vitality
2. Proper weight for height
3. Good solid flesh
4. Good posture (shoulders erect, chest up, chin in, abdomen in)
5. Normal air passages (no enlarged, inflamed or diseased tonsils; should breathe with mouth closed.)

6. A clear skin with good healthy color (there should be no dark circles under the eyes. The lobe of the ear, the membrane inside the eyelids and the mouth should be pink).

7. Straight, sound, clean teeth (the upper and lower teeth should meet.)

8. Bright, clear eyes, good vision.

9. Good hearing (no discharge from ears; no hardened wax. Should be able to hear a whispered voice in each ear at a distance of six feet).

10. Good nerve control (good disposition—ability to get along well with others.)

11. A normal bowel movement every day (without a laxative).

Note: Avoid pointing out specific cases (good or bad) as illustrations in the school or community.

Explanation of the Health and Nutrition Summary Sheet

The Summary Sheet is a record of the state of health and nutrition of each child and is to be left in each room as a reference for the teacher or health worker. This record enables the teacher or health worker to tell at a glance the condition of health and nutrition of each child; it also serves as a means of emphasizing definite health standards. It is a record which the children themselves can understand and as a result, each child is stimulated to do follow-up work in the home. Because of the child's desire to have a gold star placed before his name, he will be better able to secure the attention of his parents and thus secure better cooperation.

How to Use the Summary Sheet

If for instance the child is below average weight, a red cross or a red star is placed in the column headed “Below average weight.” When the weight is brought up to normal through cor-
rected food and health habits or probably corrected physical defects, a blue cross or a blue star is placed in the square below the red star. If, instead, the child is above the average weight the red star is placed in the column “Above average weight”. When the weight is brought down to the “safety zone” a blue cross or star is placed beneath the red star in the column “Above average weight”. If under the column “Normal Air Passages” all the defects are found, a red star is placed under each heading, “Acute or Chronic Tonsilitis”, “Enlarged or inflamed tonsils”, etc. If the defects are corrected a blue star is placed in the square beneath each red star. If a medical examination is considered advisable a statement is sent home to the parents, giving reasons why such an examination is deemed advisable. If the child and the parents cooperate to such an extent (and continue to cooperate throughout the year) that a satisfactory health standard is attained, and a blue star has been placed beneath every red star on the chart, a gold star is placed after the child’s name on the Summary Sheet. If for instance the child has faithfully observed (and continues to observe throughout the year) all the food and health rules and has had all physical defects corrected in so far as possible but can never obtain relief from certain physical defects, he should have two small gold stars placed after his name on the Summary Sheet. For example, a child who has had infantile paralysis or a child whose deafness cannot be corrected.

The Summary Sheet is then a visible efficiency test of the results of right living and of the correction of such physical defects as may lower the general health and efficiency of the individual.
# HEALTH SCORE

<table>
<thead>
<tr>
<th></th>
<th>Credit</th>
<th>Deduct</th>
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<tbody>
<tr>
<td>Proper weight for height—Bones well padded with flesh</td>
<td>15</td>
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<tr>
<td>For each percent below average weight for height</td>
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<td>1</td>
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<tr>
<td>For each percent over 20% above average weight</td>
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<td>1</td>
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<tr>
<td>Muscular development—(solid flesh)</td>
<td>15</td>
<td></td>
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<tr>
<td>Flesh flabby</td>
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<td>5</td>
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<td>Flesh very flabby</td>
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<td>10</td>
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<tr>
<td>Good posture—shoulders erect, chest up, chin in.</td>
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<td>Abdomen in</td>
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<tr>
<td>Round shoulders—flat chest</td>
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<td>2</td>
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<tr>
<td>Winged shoulder blades</td>
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<td>2</td>
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<td>Prominent abdomen</td>
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<tr>
<td>Sway back</td>
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<tr>
<td>For one shoulder high</td>
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<tr>
<td>Proper development of bones and joints</td>
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<tr>
<td>Pigeon breast—barrel chest</td>
<td>5</td>
<td></td>
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<tr>
<td>Flat feet</td>
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<tr>
<td>Bowed legs</td>
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<td>Corns</td>
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<td>Bent big toe</td>
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<tr>
<td>Sound teeth</td>
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<tr>
<td>For each decayed tooth not properly cared for</td>
<td>5</td>
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<td>Crooked teeth</td>
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<td>Inflamed gums—diseased gums—soft spongy gums</td>
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<td>Unclean teeth</td>
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<td>Mal-occlusion—upper and lower teeth not meeting</td>
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<tr>
<td>Normal air passages</td>
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<td>Acute or chronic tonsillitis</td>
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<td>10</td>
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<tr>
<td>Enlarged tonsils</td>
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<td>2</td>
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<tr>
<td>Frequent raw or sore throat</td>
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<td>2</td>
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<tr>
<td>Hoarseness</td>
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<tr>
<td>Mouth breathing (probably adenoids)—Snoring</td>
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<td>3</td>
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<td>Nasal discharge</td>
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<td>Frequent colds</td>
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<td>Poor wind</td>
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<tr>
<td>Sound restful sleep—regular hours</td>
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<tr>
<td>Restlessness—bad dreams</td>
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<tr>
<td>Ages 6-9 not in bed by 8 o’clock at least 6 days</td>
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<td>a week</td>
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<td>Ages 9-16 not in bed by 9 o’clock at least 5 days</td>
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<td>a week</td>
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<td>3</td>
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<tr>
<td>Closed windows</td>
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<td>Normal bowel movement daily—sufficient elimination of waste</td>
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<td>Cathartics</td>
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<td>Bad breath</td>
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<td>Coated tongue</td>
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<td>Headache</td>
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</table>
Credit | Deduct
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Clean healthy skin and scalp | 7 | 1
Bathing less than once a week | 1 | 1
Not washing hands before eating | 1 | 1
Dull, sallow or colorless skin—(Anemic condition if lobes of ears are not pink) | 2 | 1
Habitually dirty skin or scalp | 1 | 1
Pimples | 2 | 1
Dark circles under eyes | 1 | 1
Eczema | 1 | 1
Lice, ringworm, itch | 1 | 1
Healthy eyes—eyes clear, bright—vision good | 7 | 1
Headache | 1 | 1
Squinting—scowling | 1 | 1
Not wearing glasses when necessary | 2 | 1
Inflamed lids | 1 | 1
Crossed | 1 | 1
Poor writing or reading or spelling | 1 | 1
Good hearing—ability to hear whispered voice in each ear at 6 feet | 3 | 1
Earache—infected ears | 1 | 1
Hardened wax in ears | 1 | 1
Deafness in one ear | 1 | 1
Deafness in both ears | 2 | 1
Good nervous control | 3 | 1
Fits of temper | 1 | 1
Hysterics | 1 | 1
General nervousness—irritability | 1 | 1
Reasonable clothing | 4 | 2
High heels or deforming shoes | 2 | 1
Seasonable clothing to prevent undue exposure in winter and in bad weather | 2 | 1
Exercise—fresh air | 2 | 1
Laziness— sluggishness | 1 | 1
Over fatigue in work or in play | 1 | 1
Being up to grade for age (Ayres Standard) | 3 | 1

**TOTAL** - 100

*Note—Vaccination scar may be included in the health score if the school authorities and patrons deem it necessary.*
# WEIGHT-HEIGHT-AGE TABLE FOR BOYS OF SCHOOL AGE

**BY DR. BIRD T. BALDWIN AND DR. THOMAS D. WOOD**

<table>
<thead>
<tr>
<th>Ht. Ins.</th>
<th>Av. Wt. (Lbs.)</th>
<th>5 yrs</th>
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**Notes:**
1. Age is taken at the nearest birthday; height at the nearest inch; and weight at the nearest pound. A boy is considered 6 years old at any time between 5½ and 6½ years.
2. The following percentage of net weight has been added for clothing (shoes, coats, and sweaters are not included):
   - For weights from 35 to 63 lbs.—2.5% of net weight is added
   - For weights 64 lbs. and over—4.0% of net weight is added
3. The figures not starred represent exact averages in round numbers.
   - The starred figures represent smoothed or interpolated values.

*Compiled by the Iowa Child Welfare Research Station, State University of Iowa, Iowa City, Iowa.*

Note—½ lb. is the normal rate of gain for school children each month.
<table>
<thead>
<tr>
<th>NAME OF CHILD</th>
<th>NUTRITION</th>
<th>VITALITY</th>
<th>MUSCLE TONE</th>
<th>POSTURE</th>
<th>BOWELS</th>
<th>NERVE CONTROL</th>
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<td>Very Flabby</td>
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NOTE: A red star or cross indicates defect.
A blue star or cross indicates correction of defect.
One gold star indicates health standard attained.
Two gold stars indicates health standard attained in so far as possible.

Additional Copies of this Summary Sheet may be secured from Montana extension service, Bozeman, Montana.
<table>
<thead>
<tr>
<th>BOWELS</th>
<th>NERVE CONTROL</th>
<th>EARS</th>
<th>EYES</th>
<th>TEETH</th>
<th>HISTORY OF AIR PASSAGES</th>
<th>SKIN—SCALP</th>
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<tr>
<td>Constipa- tion</td>
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<td>Ears</td>
<td>Difficult in Hearing</td>
<td>Swollen or Ulcerated Ears</td>
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*Grade may be assigned by the Principal.*

**Standard attained in**
WEIGHT-HEIGHT-AGE TABLE FOR GIRLS OF SCHOOL AGE

BY
DR. BIRD T. BALDWIN AND DR. THOMAS D. WOOD

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<th>Av. Wt. (Lbs.)</th>
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</table>

Notes:
1. Age is taken at the nearest birthday; height at the nearest inch; and weight at the nearest pound. A girl is considered 6 years old at any time between 5 1/2 and 6 1/2 years.
2. The following percentage of net weight has been added for clothing (shoes and sweaters are not included):
   For weights from 36 to 65 lbs.—3% of net weight is added
   For weights from 66 to 82 lbs.—2.5% of net weight is added
   For weights from 83 lbs. and over—2% of net weight is added
3. The figures not starred represent exact averages in round numbers.
   The starred figures represent smoothed or interpolated values.

Printed by the Iowa Child Welfare Research Station, State University of Iowa, Iowa City, Iowa.
TABLE FOR FINDING INSTANTLY THE PER CENT ABOVE OR UNDER THE NORMAL WEIGHT

Note: This table has been compiled for convenience in ascertaining the percentage of weight over or under normal.

Illustration: If the child's normal weight is 51 pounds and he weighs 58, refer to the left-hand column, locate the number 51, follow the columns to the right until you reach the column bearing at the top the number "7" the number of pounds he is above normal weight, and you instantly see that he is 13% above weight. Conversely if the child should weigh 51 pounds and weigh but 44, proceed in the same manner, and you will see that he is 13% underweight.

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Directions for Using the Weight Charts

The normal weight should be in red.

The numbers at the left side of the page designate pounds. The row of numbers at the top designate weeks. Each square (up and down the page) equals 1 pound. Each square (across the page) equals 1 week.

To plot the normal or average weight line:

John B. should weight 71 pounds. Place a red dot at the figure 71. The minimum gain for each month is approximately one-half pound. If the school year is of 10 months duration the child should then have gained at least 5 pounds. Count up from 71 five pounds (to 76 pounds). On a line even with 75 and through 40 weeks make a red dot. Connect with a red line this dot with the dot at 71. This is the normal weight line. The normal weight line will be below the actual weight line if the child is overweight.

Note: Be sure to plan so the normal weight line will be near the center of the page.

To plot the actual weight line:

John B. weighs 63.5 pounds. Start a black dot at 63.5. If the child gains in weight the next month count over 4 squares and up to the point indicating the weight at the end of the month. Make a black dot here and connect the two dots with a black line. If the child loses weight in a month count over 4 squares and down to the point indicating the weight at the end of the month.
Name Betty Brown  Height 54-inches  Weight 63.5  Grade 5
Date ..........  Age 9  Average Weight 71
Underweight 7.5 lbs. 11 ozs.

<table>
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Average Weight Line

Similar copies may be secured from:

ELIZABETH MCCORMICK MEMORIAL FUND, 848 N. Dearborn St., Chicago. $1.25 per thousand.
Lesson II.
The Race for Health

Object:

To present the food and health rules which will help to win the race for health.

Method:

1. Show the health ladder (see directions below), and explain the race
2. Explain the food and health rules. (These rules are to be checked each month and a gold star is to be placed on the honor roll for deserving pupils. As a reminder to the children and as a means of arousing interest there should be a discussion of the food and health rules at least once a week during the opening exercise period or at some other satisfactory time.)
3. Score the food habits of the older children using the Food Habits Score Card. (This score may be used later at various intervals if it is considered advisable.)

Directions for Making the Health Ladder

Use light weight card board 24 inches wide and 30 inches long. Draw a ladder with 24 rungs. Each space between the rungs is to represent 4 oz. or four spaces to represent 1 lb. Mark at the left of the ladder (for the first pound, and beginning at the bottom rung) 4 oz., 8 oz., 12 oz., 16 oz., etc. Mark the pounds at the right side of the ladder (beginning at the lowest rung) 1, 2, 3, 4, 5, 6 lbs. Cut the brownies or dolls out of light weight, colored cardboard. Write a child’s name across the front of each brownie. Fasten each brownie to the cardboard with thumb tacks.

Directions for Using the Ladder

At the beginning of the race, fasten all the brownies on the very first rung at the bottom of the ladder (with feet on the rung) so that each child will have a fair start. The idea is to see which of the children can gain weight the fastest and get to the top of the ladder first.

If a child loses weight at the end of the first month he is moved down below the first rung of the ladder (at the bottom) the corresponding amount. (The feet of the brownie always mark the point at which the gain is recorded.)
It is advisable to use the health ladder particularly in the lower grades. The weight record charts as shown in the bulletin may be used for each child in the upper grades. The weight curve is to be plotted after each monthly weighing.

Explanation of Food and Health Record Chart

To the Parents:

The food and health rules are given out to help stimulate an interest in health. Parents should cooperate with the school by carefully preserving the record and by helping the child to check his own record each day. A check is made with an X for each rule carried out each day of the week. Count the number of X’s for each day and place the total number in the column marked “Total number of perfect records each day.” The child averaging 16 X’s a day for a month is entitled to a silver star or merit seal on the class honor roll. The child with a perfect record for the month (an average of 21 X’s each day for a month) is entitled to a gold star on the honor roll.

Explanation of the Food and Health Rules

1. The child 6-9 years of age should have at least 11 hours of sleep every night. The child 9-16 years of age should have at least 10 hours of sleep every night. The bed time hour for the different ages should be observed particularly on nights preceding school days.

2. Have as much fresh air in the sleeping room as possible. If it is impossible on stormy nights to have the windows in the sleeping room open very wide, get plenty of fresh air into the room from some other protected part of the house.

3. The milk may be taken on cereals, in cream soups, on toast, in creamed vegetables, in cocoa or postum, in custards, junkets, etc. Only a small amount of meat and eggs are necessary (one piece of meat and one egg each day) if at least three cups of milk are taken each day.

4. A good breakfast may include cooked cereal (preferably some whole grain), fruit, toast or bread, weak cocoa or postum or milk, probably an egg or some bacon. Do not give fresh bread or rolls, hot biscuits, pancakes, waffles, doughnuts,
fried potatoes, fritters, etc.
A good rule to follow—"No breakfast, no school." (Dr. Hedger.)

5. Tea, coffee, etc., are stimulants and should never be given, (Weak cocoa, 1 level tsp. of cocoa to a cup of liquid, made with all milk may be given once a day.)

6. The boy or girl who needs to gain may have a lunch of milk and toast or graham crackers or fruit if the appetite for regular meals is not affected. Small amounts of fruit are permitted to children who are up to the average weight but the habit of piecing between meals should be discontinued. Sweets, ice cream sodas, cracker jack, peanuts, etc. between meals are apt to be detrimental to health.

7. Vegetables that may be eaten raw: lettuce, celery, radishes, tomatoes, onions, cabbage, carrots, turnips, kohlrabi, fresh cucumbers, green peppers, asparagus tips, dandelion greens, endive, water cress, etc.

Green or leafy vegetables include: turnip or beet tops, spinach, Swiss chard, endive, lettuce, wild greens (cress, dandelion, lamb’s quarter, wild lettuce, celery, green onions, asparagus, green peppers, etc.

8. Tomatoes, rhubarb, watermelon and canteloupe may be classed as fruit. Jelly, preserves, marmalade, etc. are not classed as fruit.

9. Whole grains in bread or in cereal include: steel cut oats, rolled or cracked oats, whole wheat, rye or barley, unrefined corn meal, unpolished rice.

10. Take at least 15 minutes to eat breakfast, and at least 20 minutes for the other meals.

11. It is well to drink one glass of water every morning before breakfast. Water, particularly at meal time, should not be taken in such quantities that insufficient food will be eaten. Food should not be washed down with water or any other liquid.

12. Form the habit of going to the toilet at a regular time each day (before or after breakfast is a good time.)

13. Two full baths each week are necessary for body cleanliness. The whole body (hands, face, neck, ears, etc.) should be kept as clean as possible every day.
14. Wash the hands on leaving the toilet and always before eating. Disease germs may be carried by dirty hands to food and thus into the body.

15. If during bad weather or if the child is ill, out of doors play is not advisable, he should be dressed warmly and allowed to play in some sheltered place or in a room with an abundance of fresh air.

16. Teeth should be brushed with the up or down movement (up movement for lower teeth and down movement for the upper teeth.) Common salt is excellent for cleaning the teeth.

17. Dirty hands, finger nails, pencils, etc may carry disease germs to the mouth or eyes. The eyes should not be rubbed; hard sharp substances should not be put into the ears to remove wax.

18. It is well to do the exercises given in the posture lesson at least once a day. This will help to straighten round shoulders.

19. Read or work with the light over the left shoulder. Reading in bed or in a poor light or in the dusk should be prohibited. Protect the eyes from the bright sun or any bright glaring light.

20. See that the child's coat is buttoned up in winter and that he wears rubbers or overshoes or warm hose or leggings when necessary.

To the teacher:

The record charts are to be returned by each child at the beginning of each month for inspection and for crediting. (The honor roll system may be used), and new record sheets are to be given out for the next month's record.

The teacher may use her own ingenuity for arousing and keeping the interest of her pupils in the health rules. If posters are made, only sound, scientific principles should be emphasized in these posters.

The honor roll chart may be kept in a conspicuous place in the room. This chart should include the names of the children, the months of the school year, and space for the gold or silver stars.
Lesson III
Milk

Object:
To make the children see for themselves the importance of milk as a food, and to make them want to drink it.

Method:
1. Why children should drink milk.
   Can any other foods take the place of milk?
   (a) Show the pictures of the rats, pigs, puppies and chickens that have had milk and those that have had no milk. (Small charts illustrating feeding experiments with animals and children may be bought at 16c a chart from the National Dairy Council, 910 South Michigan Avenue, Chicago, Ill.)

HONOR ROLL
(To be Placed in Each Room)

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FOOD HABITS SCORE

Note—This score card does not include a complete diet, but it will help you to know whether or not you are following certain food habits most essential to health most often neglected. Supplement the score card with bread, butter, potatoes, fruit, eggs or fish and other commonly used foods.

1. **Milk in some form**
   - 3 c daily ................................ 15
   - 2 c daily .............................. 12
   - 1 c daily ................................ 5

2. **Vegetables (not including potatoes)**
   - 2 x day ................................ 10
   - 1 x day ................................ 7
   - 3 x week ................................ 3
   
   **Give extra credit for greens or leafy vegetables**
   - 1 x day—10 points
   - 3 x week—7 points
   - 2 x week—3 points

   **Give extra credit for raw vegetables or raw fruits**
   - 2 x day—20 points
   - 1 x week—10 points
   - 3 x week—7 points
   - 2 x week—3 points

3. **Fruit**
   - 1 x day ................................ 10
   - 3 x week ................................ 7
   - 2 x week ................................ 5

4. **Cooked Cereals**
   - 1 x day ................................ 10
   - 3 x week ................................ 7
   - 2 x week ................................ 3

   **Give extra credit for whole grain products in bread or in cereals**
   - 1 x day—10 points
   - 3 x week—7 points
   - 2 x week—3 points

5. **Water 6-8 c daily** ......... 15
   - 4 c daily................................ 7

   **TOTAL SCORE** 100

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**Deductions for Undesirable Habits**

<table>
<thead>
<tr>
<th>1. Going without breakfast</th>
<th>5</th>
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<tbody>
<tr>
<td>2. Sweets or trash between meals</td>
<td>5</td>
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<tr>
<td>3. Each c of tea, coffee or coca cola</td>
<td>5</td>
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<tr>
<td>4. Eating too fast</td>
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<tr>
<td>5. Not willing to eat 12 different vegetables</td>
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<tr>
<td>6. Washing down food</td>
<td>5</td>
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<tr>
<td>7. Excessive use of meat (more than 1 ordinary or 2 small servings of meat a day.)</td>
<td>5</td>
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<tr>
<td>8. Excessive use of fried foods—potatoes, hot cakes, etc.</td>
<td>5</td>
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</table>

**TOTAL DEDUCTIONS**

**FINAL SCORE**
(b) Have the children describe the difference in appearance of these two animals.
(c) Have children guess the ages of these animals.
(d) Explain that the only reason for their difference in size is the food they ate.
(e) Have children try to guess what animal No. 1 and animal No. 2 had to eat. (Make clear that the wee, skinny one had as much of his food as he wanted but he didn't have any milk, and his failure to grow was caused only by the lack of milk.)
(f) Repeat the question, "Do you think any food will take the place of milk?" Clinch this thought. "Milk made the one grow; lack of it kept the other from growing as he should."

2. A second reason for drinking milk.

(a) Have the children feel deep down into the arm. Where else are bones found? What makes bones and teeth hard?
(b) Show some lime in a saucer. Tell of the different kinds of lime. (Lime found in food such as milk and vegetables, and lime used in plastering, etc. Explain that only the lime found in food can be used by our bodies.)

Compare the color of lime with the bones and the teeth.

Have a quart of milk and a quart of water on the table. Put lime into the water (just as much as the water will dissolve). There is more lime in one quart of milk than in one quart of saturated lime water. Milk also contains a substance called phosphorus which helps to build bones, teeth and muscle.

(c) What happens to children when they have no foods containing lime (no milk or vegetables). Ans. The bones do not harden properly and they may have a disease called rickets. Sometimes the legs are bowed and the ribs are apt to be abnormal. The teeth may not come in at all or they may be soft and decay easily. The bad effects of not having
sufficient lime foods may not be noticed right away, but they will be noticeable after a time.

(d) Milk also contains some substances called vitamins which help children to grow. Tell about the children in Europe who did not have enough of one of these substances (vitamin A) and did not grow, and as a result of the lack of this vitamin an eye disease developed which caused many children to go blind.

(e) Foods containing the most lime given in order of lime content: (Impress the fact that milk is the best lime food.)

- cheese
- milk
- buttermilk
- celery
- beet and turnip tops
- molasses
- dried figs.
- egg yolk
- string beans
- cauliflower
- cream
- dried peas
- oatmeal
- walnuts
- peanuts
- spinach
- turnips
- raisins
- carrots
- raspberries
- cabbage
- whole wheat flour
- rutabagas
- Swiss chard

3. The third reason for drinking milk.

(a) Have each child feel his own arm. Is the flesh solid? (If so, we call this good muscle tone.)

(b) Some of the tissue or muscle building foods:

- milk (the most important building food)
- cheese
- nuts
- meat
- dried beans
- eggs
- fish
- cereals (wheat, corn, oats)

Children need some of this building food every day, but not very much, for muscles do not grow very fast. If a sufficient quantity of milk is taken it is better to eat only a small amount of other building foods in addition.

Have each child write a story about the milk fed animal and the one without milk.
Lesson IV.
Sleep and Rest

Object:
To get the child to see the necessity for long hours of sleep and to show that if they do not go to bed at an early hour, they can not get enough sleep.

Method:
1. Discuss the health rules. What was the hardest thing to do?
2. Why should children go to bed early? What happens when children are asleep? Plants and flowers grow at night if they have had sufficient light and sunshine during the day. Is this the growing time for children? Ans.—Yes, when we sleep our whole body gets a rest. When children play all day the body does not have a chance to rest or to grow.
3. Have a child lie down and pretend to sleep. Has he really stopped like an engine does? Ans—No, the heart beats; he breathes; the body engine is still going.
   Put fingers on the pulse. Count the number of times the heart beats in a minute (probably 80 counts.) Have the child put the hands over the head and touch the floor. Do this ten times. Now take the pulse reading (probably around 120 counts.) How much difference is found? How many more times a day? When children play the heart beats much faster than when they are quiet. Sleep gives the heart some rest. Our muscles can rest entirely, but the heart never stops until we die. Suppose the heart needs 10 hours of rest a day and we give it only 8 hours. What might this do to the heart? Will we live long? We do not want to be like a broken down old engine.
   Do nerves get a rest at night? How do children act if they have not had a nap? When they haven’t gone to bed when they should? How do you feel every morning? What happens if you have not had enough sleep?
4. The amount of sleep that children need.
   How much time do babies sleep? Ans—Young babies should sleep 18 hours; older babies 16 hours; a child 3 to four years old 13 hours. How much should your
father and mother sleep? Ans.—8-9 hours. How much sleep do you need? Ans.—More than father and mother, and less than baby.

Wise people have figured out the following table:

- **5-6 years**..................13 hours sleep
- **6-8 years**..................12 hours sleep
- **8-10 years**................11½ hours sleep
- **10-12 years**................11 hours sleep
- **12-14 years**................10½ hours sleep
- **14-16 years**................10 hours sleep
- **16-18 years**................9 hours sleep

What time should you go to bed to get 11 hours sleep? Draw a clock on the board. School begins at 8. Get up at 7 o’clock. Count back to see how many hours 11 hours is back of this (8 o’clock). During school time go to bed at 8 o’clock. Is it right to stay up as long as you want to and then get up later in the morning? Ans.—No. Sleep before midnight is the best sleep. If children stay up late and get too tired before they go to bed they will not feel rested even if they do sleep late in the morning. During school time children must keep regular hours. Is this necessary in the summer time? Suppose you sleep late, miss breakfast or eat breakfast too near dinner time. What happens to the appetite for dinner? Ans.—The whole day is upset and there are no regular meal hours. (The best hours for meals during the summer time are 8:00, 12:00 and 6:00 o’clock).

5. There is another good reason for the early bed hour. Get a mirror and have the children look to find blue circles under the eyes. How can we tell whether a child has had enough sleep? Ans.—By the dark color under the eyes. This is probably a sign that there has not been enough sleep.

Children under weight need even more sleep. They must also take more rest during the day.

What is meant by “rest?” Ans.—Complete relaxation (lying down). Let go of self, be as limp as a rag.
Lesson V.
Teeth

Object:
To teach that proper diet makes good teeth.

Method:
1. Teeth are made of lime and phosphorus and they can not grow properly unless we give our bodies food containing these substances which the blood carries to the teeth.
2. Sugar on the outside of the teeth causes a fermentation which produces an acid. This acid will affect the enamel so that the teeth will decay. Starchy foods will have somewhat the same effect.
3. To have good teeth children should:
   (a) Eat foods that build teeth—milk, cheese, vegetables, fruits, and whole grains.
   (b) Not eat sweets between meals; eat them after meals and only in small amounts.
   (c) Brush the teeth well after each meal and especially after eating sweets. (Brush with the down movement on the upper teeth and with the upward movement on the lower teeth. Be sure to brush the inside and also the tops of the teeth. A brush with the bristles shorter on the end will make it more possible to brush the back teeth.)
   (d) Have the teeth examined at least once a year by a dentist. Be sure to have teeth filled as soon as possible after they start to decay.

Lesson VI.
Posture

Object:
To get the child to know what good posture is, and the things he might do to get this posture.

Method:
1. Some exercise to help people straighten up.
   Count 1—2—3—4—5
   1. Raise arms to side
   2. Palms up
   3. Drop arms down
## Food and Health Habits Record Chart

<table>
<thead>
<tr>
<th>Name of Child</th>
<th>1st week</th>
<th>2nd week</th>
<th>3rd week</th>
<th>4th week</th>
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<tbody>
<tr>
<td>1. Child 6-9 years—bed at 8:00 or earlier at least 6 days a week</td>
<td>X X X X X</td>
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<tr>
<td>Child 9-16 years—bed at 9:00 or earlier at least 5 days a week</td>
<td>X X X X X X</td>
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<td>2. Windows open at night</td>
<td>X X X X X X</td>
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<td>3. At least 3 cups of milk in some form</td>
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<tr>
<td>4. A good breakfast</td>
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<tr>
<td>5. No tea, coffee, coca cola, cigarettes, etc.</td>
<td>X X X X X X</td>
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<tr>
<td>6. No sweets or trash between meals</td>
<td>X X X X X</td>
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<td>7. Two vegetables besides potato, to include:</td>
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<tr>
<td>(a) A raw vegetable (or a raw fruit)</td>
<td>X X X X X</td>
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<tr>
<td>(b) A good serving of some green or leafy vegetable</td>
<td>X X X X X</td>
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<tr>
<td>8. Some fruits—raw, canned, dried</td>
<td>X X X X X</td>
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<tr>
<td>9. Whole grains in bread or in cereal</td>
<td>X X X X X</td>
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<td>10. Eat slowly—chew the food thoroughly</td>
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<td>11. Drink 4 to 6 glasses of water every day</td>
<td>X X X X X X</td>
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<tr>
<td>12. Have a bowel movement (without a laxative)</td>
<td>X X X X X</td>
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<tr>
<td>13. Take a bath at least twice a week (mark the days with an X)</td>
<td>X X</td>
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<td>14. Wash the hands before eating</td>
<td>X X X X X X</td>
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<td>15. Spend at least 2 hours in the fresh air every day</td>
<td>X X X X X</td>
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<td>16. Brush the teeth at least twice a day (preferably morning and night)</td>
<td>X X X X X</td>
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<td>17. Try to keep hands, pencils, or anything apt to be unclean or injurious away from the mouth, nose, eyes, ears, etc.</td>
<td>X X X X X</td>
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<tr>
<td>18. Try to sit, stand, and walk erect and to breathe deeply</td>
<td>X X X X X</td>
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<tr>
<td>19. Try to protect eyes from strain or injury. (Read with light over left shoulder; do not read in bed or in a poor light; protect the eyes from very bright or glaring light)</td>
<td>X X X X X</td>
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<tr>
<td>20. Try to wear proper clothing to prevent exposure in winter and in bad weather.</td>
<td>X X X X</td>
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</table>

**Notes:**
- **TOTAL NUMBER PERFECT RECORDS EACH DAY:**
  - Monday: 2
  - Tuesday: 21
  - Wednesday: 22
  - Thursday: 21
  - Friday: 20
  - Saturday: 21

**Mother's signature:**
4. Turn palms out
5. Push shoulders back as far as possible, keeping arms at sides.

2. Show the children "wings" (the shoulder blades stick out like wings). Take a child's hand and go through the above exercises to show children how this flattens the back. Explain that children with flabby flesh or poor muscle tone usually have "wings" because the muscles are not strong enough to hold these bones in place. What helps to make solid flesh? Ans.—Milk.

3. Stretch arms to side, palms up, elbows back. Swing to the top of the head. Bring arms down and let them go back as far as possible. (Do this exercise before you go to bed at night or when you first get up in the morning.)

4. Test for standing erect:
   (a) Put book on the head. Try to walk with the book on the head.
   (b) Have children all stand
      (1) Just any way
      (2) As straight as you can (stomach in, chest up, shoulders back, head up parallel with the shoulders.) As tall as you can, as straight as you can and as proud as you can.
      (3) Sit down same posture. Try to hold a book on the head sitting down.

How many children will say when you walk home, "Stand as straight as you can, as tall as you can and as proud as you can"?

Lesson VII.
The Effect of Eating Between Meals

Object:
To get the children to realize that the stomach has a great deal of work to do and has very little time to rest; that eating between meals, unless the food is carefully chosen, will keep the stomach working all day and part of the night.

Method:
1. Study "Good Meals for Children" (in this lesson) and pick a good breakfast, luncheon and dinner. Also observe
the Food Habits Score Card. (Write the menus on the board.)

2. Have each child tell what he eats between meals when he is hungry.

3. Suppose a child eats one hour after breakfast, a piece of bread and butter, later he eats some peanuts, later some candy.
   Point to the dinner menu on the blackboard. How would this big dinner appeal to you? What would you be most apt to leave out? What has piecing done to the meal? Ans.—Would not eat as much. Probably would not eat the vegetable nor drink the milk and would eat only a part of the bread.

4. Suppose he does the same thing in the afternoon if there is candy left or if he gets hungry and eats cake or cookies or ice cream. What happens to his appetite for supper? What if he keeps this up day after day. Will he grow big and strong? (Candy or sugar contains nothing that builds the body, the muscles, the teeth and bones.) How would you expect this child to look?

5. The effect of too much sugar or sweets on the lining of the stomach. Have you ever held a piece of candy in your cheek? How does it feel? Ans.—It puckers. If it hurts the lining of your cheek how much more apt it is to injure the more delicate lining of any empty stomach. Have you ever seen fruit juice ferment (foam)? Too much sugar in the stomach will cause fermentation. We are apt to get sick and we say our stomach is sour.

   If someone gives you candy or sweets when will you eat them so they won't be harmful? Ans.—After a meal. How many pieces of candy then? Ans.—Two or three small pieces. What about eating candy one or two hours after a meal? Ans.—It is better to eat it right after the meal.

7. Discuss what the stomach will have to do to these foods and how long it will have to work to get each meal ready
for the blood. (Correlate this lesson with the lesson on hygiene or physiology.)

8. Determine the working periods and the rest periods of the stomach. Ans.—The time between breakfast and dinner; between dinner and supper; between supper and breakfast. The stomach needs rest because everything else needs rest after working.

9. Is eating between meals good at any time? Ans.—Children who need to gain may eat certain foods that will not interfere with the regular amount of food at meals and it must be the kind of food that the stomach can quickly care for. What foods would be good? Ans.—Milk and toast, or milk and graham crackers, or fruit such as an orange or an apple.

**Good Meals for Children**

1. Breakfast
   (a) Fruit
       oranges
       stewed prunes
       apricots
       cooked figs
       apple sauce
       baked bananas (with lemon juice)
   (b) Cereals
       oatmeal
       cracked wheat or whole wheat
       Pettijohns
       Wheatena
       corn meal mush
       barley
       graham mush
       hominy
       unpolished rice
       with milk (dates, raisins or figs may be added to the cereal)
   (c) Bread and butter or toast (whole grain breads are best — whole wheat, rye, oatmeal, etc.)
(d) Milk to drink or cocoa made with whole milk, or cereal beverage made with whole milk (postum)

2. Dinner
   (a) An egg (poached, coddled or scrambled)
   small piece of meat
   fish
   milk vegetable soup
   meat vegetable stew
   (b) Potato
   baked, mashed boiled, steamed, creamed, (not fried)
   (c) Vegetables—spinach, Swiss chard, green beans or any greens, stewed onions, carrots, beets, pears, baked squash, corn.
   Vegetables may be served—creamed, baked steamed, stewed, with butter, escalloped, in salads.
   (d) Bread and butter (preferably whole wheat, oatmeal or rye bread.
   (e) Dessert—baked apples, simple puddings such as rice, bread, cornstarch, tapioca, custards, gelatin, junket desserts, fruit (raw or cooked).

3. Supper
   (a) Graham or corn meal mush and milk
   unpolished rice and milk
   milk toast (toast made of whole grain bread)
   milk vegetable soup
   baked potato and milk gravy
   poached egg on toast
   baked macaroni and cheese sauce
   (b) One vegetable besides potato—baked, creamed, escalloped, in salad.
   (c) Bread and butter or toast
   (d) Fruit and graham crackers or plain cookies.

* Food Values of Some Common Foods

<table>
<thead>
<tr>
<th>Food</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butter 1 tbsp</td>
<td>100</td>
</tr>
<tr>
<td>Milk 1 c.</td>
<td>160</td>
</tr>
<tr>
<td>Cream one-third c</td>
<td>135</td>
</tr>
<tr>
<td>Cheese 1 cube 1” x 1”</td>
<td>100</td>
</tr>
<tr>
<td>Apple 1 small</td>
<td>50</td>
</tr>
<tr>
<td>Apple 1 medium</td>
<td>80</td>
</tr>
<tr>
<td>Baked apple with sugar</td>
<td>100</td>
</tr>
<tr>
<td>and raisins (small)</td>
<td>100</td>
</tr>
<tr>
<td>Banana medium</td>
<td>100</td>
</tr>
<tr>
<td>Prunes 6 medium</td>
<td>100</td>
</tr>
<tr>
<td>Plum 1 medium</td>
<td>25</td>
</tr>
<tr>
<td>Item</td>
<td>Calories</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Orange 1 large</td>
<td>100</td>
</tr>
<tr>
<td>Orange 1 medium</td>
<td>80</td>
</tr>
<tr>
<td>Dates 4 or 5</td>
<td>100</td>
</tr>
<tr>
<td>Figs 1½</td>
<td>100</td>
</tr>
<tr>
<td>Raisins 2 doz.</td>
<td>100</td>
</tr>
<tr>
<td>Peach, medium</td>
<td>35</td>
</tr>
<tr>
<td>Bread 1 thin slice</td>
<td>50</td>
</tr>
<tr>
<td>Rolled oats 1 c cooked</td>
<td>100</td>
</tr>
<tr>
<td>Cooked hominy grits two-thirds c</td>
<td>50</td>
</tr>
<tr>
<td>Rice steamed three-fourths c</td>
<td>100</td>
</tr>
<tr>
<td>Cornmeal (cooked) two-thirds c</td>
<td>100</td>
</tr>
<tr>
<td>Farina (cooked) two-thirds c</td>
<td>50</td>
</tr>
<tr>
<td>Shredded wheat 1 biscuit</td>
<td>100</td>
</tr>
<tr>
<td>Puffed rice two-thirds c</td>
<td>88</td>
</tr>
<tr>
<td>Puffed wheat two-thirds c</td>
<td>100</td>
</tr>
<tr>
<td>Corn flakes two-thirds c</td>
<td>80</td>
</tr>
<tr>
<td>Grape nuts 3 tbsp</td>
<td>100</td>
</tr>
<tr>
<td>Raw tomatoes 1 large</td>
<td>25</td>
</tr>
<tr>
<td>Spinach 1 serving (no seasoning)</td>
<td>25</td>
</tr>
<tr>
<td>Raw shredded cabbage 1 c</td>
<td>20</td>
</tr>
<tr>
<td>Cocoa—two-thirds c milk, 1 tsp. cocoa, 1 tsp. sugar</td>
<td>130</td>
</tr>
<tr>
<td>Cream of tomato soup three-eights c</td>
<td>100</td>
</tr>
<tr>
<td>Cream of baked bean soup one-half c</td>
<td>100</td>
</tr>
<tr>
<td>Creamed peas one-half c</td>
<td>100</td>
</tr>
<tr>
<td>Potato medium</td>
<td>100</td>
</tr>
<tr>
<td>Escalloped onions one-half c</td>
<td>100</td>
</tr>
<tr>
<td>third c</td>
<td>100</td>
</tr>
<tr>
<td>Cooked onions 1 medium no seasoning</td>
<td>50</td>
</tr>
<tr>
<td>Raw onions 1 medium</td>
<td>50</td>
</tr>
<tr>
<td>Head lettuce 1 serving plain</td>
<td>10</td>
</tr>
<tr>
<td>Creamed turnips one-half c</td>
<td>100</td>
</tr>
<tr>
<td>Squash 1 serving no butter</td>
<td>50</td>
</tr>
<tr>
<td>Asparagus tips cooked 1 serving no butter</td>
<td>25</td>
</tr>
<tr>
<td>Raw carrots 2 medium</td>
<td>50</td>
</tr>
<tr>
<td>Baked beans 1 serving</td>
<td>150</td>
</tr>
<tr>
<td>Creamed codfish one-half c</td>
<td>100</td>
</tr>
<tr>
<td>Macroni and cheese one-half c</td>
<td>100</td>
</tr>
<tr>
<td>Beef steak 1 small serving</td>
<td>100</td>
</tr>
<tr>
<td>Chops—small</td>
<td>150</td>
</tr>
<tr>
<td>Poached egg on toast</td>
<td>120</td>
</tr>
<tr>
<td>Egg medium</td>
<td>70</td>
</tr>
<tr>
<td>Crisp bacon 1 slice</td>
<td>25</td>
</tr>
<tr>
<td>Custard one-half c</td>
<td>165</td>
</tr>
<tr>
<td>Ice cream one-fourth c</td>
<td>100</td>
</tr>
<tr>
<td>Cup cake 1 medium (no icing)</td>
<td>100</td>
</tr>
<tr>
<td>Sponge cake 1 large (no icing)</td>
<td>100</td>
</tr>
<tr>
<td>Sugar 1 tsp.</td>
<td>17</td>
</tr>
<tr>
<td>Molasses, one and one-half tbsp</td>
<td>100</td>
</tr>
<tr>
<td>Almonds twelve to fifteen</td>
<td>100</td>
</tr>
<tr>
<td>Peanuts twenty to twenty-four, single</td>
<td>100</td>
</tr>
<tr>
<td>Peanut butter two and one-half tsp.</td>
<td>100</td>
</tr>
<tr>
<td>English walnuts eight to sixteen</td>
<td>100</td>
</tr>
</tbody>
</table>

* Abbreviations: C.—Cup; Tsp.—Teaspoon; Tbsp.—Tablespoon.
Lesson VIII.
Playing Cafeteria

Object:
To get the child to know what will make an adequate breakfast, luncheon, and dinner by actually showing the foods in proper amounts, and to get him to realize that he must eat enough of these necessary foods if he is to grow strong and healthy.

Method:
1. To teach food values.
(Food stencils may be purchased from the University of Chicago Book Store, Chicago, Illinois, at 60c a set. They are to be painted in water colors and mounted on blocks for use. The children may cut foods from magazines and mount them for use in this lesson. Note the page on "Food Values.")

(a) Place the food stencils on the table. Explain that that dress material is measured by the yard, but food is measured by calories.

(b) Pick up each food in the group. Give the food value of each as it is shown. Compare 1 cup of cocoa with 1 cup of milk. Compare 1 cup of soup with 1 cup of milk. (Note the calorie values) Have the children help figure the calorie value of custard.

(c) Review the food value of each dish represented until they are fixed firmly in the child's mind. In this drill hold the different foods up and let the children give the value.

(d) Review the things that make a good breakfast.

2. Have two children each take a tray and pick a good breakfast. Have one child go to the blackboard and write down the calories as the rest of the class give them. A good breakfast will contain from 400 - 600 calories. (The malnourished child should have more calories at each meal than the child who is at normal weight.)

3. Follow the same plan for (1) dinner (2) supper. Find out how many of the children do eat as much as these
meals show. A good luncheon should have from 700 to 900 calories. A good dinner 1000 to 1200.

4. How to add calories to foods low in calories.
   What can be done to spinach, asparagus, green beans, onions, cabbage, etc. to make them give more fuel for the body engine? Ans.—Add butter and cream or milk. Serve these vegetables creamed, escalloped with butter or in cream soups.

5. The variation in good meals.
   Have the children tell how these meals may be varied so they won’t have to eat the same food every day.

6. Good hours for meals during the school year—7:30, 12:00 and 6:00.

Lesson IX.
Vegetables

Object:
To teach the importance of all vegetables in the diet and to create a desire in the children to learn to like all vegetables because they are good for them.

1. Display a large variety of vegetables (they may be brought from the homes by the children or they may cut pictures of vegetables from nursery catalogues or magazines.) Teach the children to recognize the different vegetables.

2. Points to teach.
   (a) Blood contains iron. Iron makes the blood red. Who has ever cut a finger and seen the blood run out? What color was it? It is the iron in the blood that makes it red. Who has seen iron rust? What color is it? (Explain that this kind of iron is different from the iron found in food, and will not be of use to our bodies.)

   (b) Red blood makes rosy cheeks; pale blood makes pale skins. The blood showing through the flesh and skin helps to give the skin its color. Here is a test to see if the body has a great deal of red blood. Take a child to the light and look through the lobe of his ear. If it is not a good pink there is not enough good red blood in the body.
Which do you children want to have—good red blood or pale blood? Why? Ans.—Children look better. There is also another reason. Children with red blood feel better. They can play and work better. Children with pale blood get tired easily and are not good at work or at play.

(c) Vegetables contain iron.
Children should have good red blood because it will make them look better and feel better. Where do you suppose the blood gets its iron to make it red? Ans.—From the food that we eat. If you want red blood you will have to eat foods that are rich in iron. What foods do you suppose have iron in them? Ans.—All vegetables have some iron but certain vegetables have more than others. The vegetables that contain the most iron, in order of their iron content are:

- dried beans
- green beet and turnip tops
- spinach
- Swiss chard
- dandelion and all wild greens
- string beans
- cabbage
- potatoes
- lettuce
- carrots
- beets
- celery
- turnips
- onions
- asparagus

(These vegetables also contain lime and phosphorus to build teeth and bones.) Iron is found in other foods too, such as egg yolks, whole grains, figs, raisins, dates, meat, nuts, etc., but in order to get a good supply of iron we should eat a good big
dish or two of these iron vegetables every day and potato besides. Note that the green or leafy vegetables have the most iron so be sure to have one of these vegetables every day.

(d) Another reason why children should eat vegetables. Vegetables help the body to get rid of its waste. A broom sweeps the floor clean of waste. Vegetables contain a woody substance that acts like a broom in the body. This is called cellulose. If a child eats enough vegetables he will have a bowel movement every day without taking pills or medicine.

(e) How to save the iron when we cook vegetables. We should cook all vegetables to save the iron. Cook potatoes in the skins. Cook other vegetables in small amounts of water and use as much of this vegetable water as possible. When vegetables are steamed or baked they lose very little of their iron and other minerals.

(f) How children can learn to like vegetables. Some of you do not like vegetables very well. Did you ever learn to like something? Do you think you could learn to like vegetables the same way? Will you try? Tell me how you are going to learn. Ans.—Eat a little every day until you learn. How many of you like cream of vegetable soup? What besides the vegetable in the soup is good for you? Suppose we set out dinners and see how many different vegetables we can have. (Use the food stencils or the pictures of foods.) Change the vegetables for Monday, Tuesday, etc. (Be sure to have some raw vegetables or raw fruits at some time during the day. These raw foods have a substance called vitamin C that helps us to grow and helps to make our teeth good.) We will talk more about vitamins later.

There is a good rule in some families—if the child does not eat his vegetables he is given no dessert.
Lesson X.
Cereals

Object:
To get the child to know that cereals are important in the diet and that some cereals are more valuable than others.

Method:
1. Have a table exhibit containing all the grains and the different cereals made from wheat, oats and corn.
2. Draw the wheat kernel on the board. Show the starchy center with white chalk. Draw the coatings of bran with brown chalk. Use red chalk to represent the minerals—iron, lime and phosphorus. Show the embryo. Explain what it is. (In the embryo there is a substance called vitamin B which is very important for growing children. A picture of the wheat kernel with all its different parts may be secured from any large milling company.)
3. The importance of cereals in the diet.

Have the children name the cereals they like best. (Children usually name the prepared cereals.) Is it just as well to eat the prepared cereals? The only way to tell is to see what is in each. Take those made of wheat first. (Have the children name all the cereals made of wheat.) Have them examine a grain of wheat. Compare it with the drawing on the board or the chart, showing the different parts of the whole grain. Have the children name all the grain cereals (whole or cracked wheat, oatmeal, unrefined corn meal, etc.) What do you get when the whole grain cereals are eaten? Ans. —All the minerals in the bran—calcium, iron, and phosphorus, the bran which is a woody substance, and like vegetables help to sweep the body clean, and the vitamin B, a growth producing and appetite producing substance which is found more abundantly in the embryo or the germ.

Classify the cereals as to whole or part whole grains.
(a) Whole grains:
1. Wheat—whole wheat flour, cracked or crushed
wheat (probably pettijohn, shredded wheat, Wheatena.)
2. Oats—steel cut, rolled or cracked oats.
3. Whole barley or rye flour.
4. Unpolished rice.

(b) Part whole grains:
1. Wheat—cream of wheat, shredded wheat, Pep-o'wheat and Farina.
2. Corn—refined corn meal, hominy.

Have the children compare the whole grain with the refined product. Does it make any difference whether you eat the whole grains or the part whole grains? Name again the cereals that contain the most minerals. Ans.—Oatmeal, whole wheat, whole barley, whole rye, unpolished rice, unrefined corn meal.

Does it make any difference whether you eat the cooked or the uncooked cereals? (This gives the children a chance to think about those made of the whole grains and this is one of the points that determine the answer.) Show a 100 calorie portion of a cooked cereal (see table of food values) and compare with 100 calories of the prepared cereals. Which would you choose if you want calories? The cooked cereals furnish good fuel material for our bodies and give us energy to run and play. Cereals will help children to gain in weight. Which costs most? (Compare the cost of a package of puffed wheat or post toasties or shredded wheat biscuit.)

Is whole wheat bread or rye bread made of whole or only part of the grain? Ans.—Only part of the whole grain. The whole wheat flour sold at the stores is as a general rule only about 85% whole wheat. A part of the bran and the embryo are usually removed.

Whole wheat bread then will help to take the place of cereals in the diet but can not entirely replace the whole grain.

What is a pretty good rule to follow from this lesson on cereals?
1. Eat more cooked cereals.
2. Eat more of those made from the whole grains.
3. Eat the prepared cereals only occasionally.
Lesson XI.
Fruit

To get the child to know what fruits do for the body and why they should be included in the day’s diet.

Method:

1. Place raisins, figs, dates, prunes, apples, oranges, grape-fruit, lemons, rhubarb, tomatoes, etc. on the table. (Picture of these fruits may be cut out of magazines for use in this lesson.)

2. Is fruit really necessary to the body or can it be left out like candy? Fruits and vegetables furnish the same things to the body. What are they? Ans.—The minerals—iron, lime, phosphorus, and vitamins.

3. In what other way do fruits help out? Ans.—They are sweet and taste good. They add flavor.

4. What is there in fruit that you taste besides the sugar? Ans.—Acid. Not many foods furnish this acid which acts as an appetizer. Tell the story of the boy who took orange juice between each meal. This made him have more of an appetite and he gained faster in weight.

5. Fruits give bulk or fibre to the food which act as a laxative to keep the bowels regular. Give each child a piece of apple. Hold it up to the light and look through it. This frame work is called cellulose. Compare this fibre with paper. All fruits and vegetables have this fibre. This fibre is a waste product and is thrown away by the body. It acts like a broom to help get rid of the waste. The acid in fruit also helps our bodies to get rid of the waste. In order to be a healthy child the bowels must move every day. If they don’t mother has to give pills or some laxative medicine. Would you rather eat fruit and vegetables and whole grain cereals instead?

6. Vitamins.
   How many have heard of vitamins before? Where? Ans.—Vitamin A in milk, vitamin B in whole grains, and vitamin C in raw vegetables. Vitamin means “life giving.” Vitamins are substances which are necessary for the growth of children for the health of children and
adults. Tell the story of the little boy who took orange juice, about six oranges a day, and had a bigger appetite and grew so much faster. Oranges and tomatoes have a vitamin called water soluble B which stimulates the appetite and also helps the child to grow. Raw fruits and cooked acid fruits, and raw vegetables have another vitamin called water soluble C. (This substance is apt to be destroyed in the process of cooking.) When people do not have enough of this vitamin in raw foods (raw fruits or vegetables particularly) they are apt to have a disease called scurvy. In this disease the joints get sore and swell, the body loses weight, the gums become spongy and there is apt to be pus, the teeth become loose and finally fall out and the person will finally die if he is not given some raw foods. Scurvy was previously more common among sailors than it is now when they took long voyages and could not get raw fruits or vegetables. Babies sometimes get sick until they are given orange or tomato juice. If they get scurvy and are not given some raw fruit juice or vegetable juice they will probably die.

**Sources of Vitamins**

**Vitamin A**

- cod liver oil
- spinach, Swiss chard, beet and turnip tops
- butter fat
- milk (the amount depends upon whether the diet of the cow is rich in this vitamin)
- cabbage
- celery

**Vitamin B**

- asparagus
- green beans
- yellow corn
- yellow sweet potatoes
- carrots
- egg yolks
- liver
- kidney
- sweet breads
- soy beans
- oranges
- lemons
- grapefruit
- whole grains (especially the germ)
- milk (the amount depends upon the diet of the cow)
Vitamin C

oranges
lemons
rhubarb
grape juice
grapefruit
tomatoes

all tender young vegetables
raw or cooked
green beans
potatoes
liver
kidney
milk (the amount depends upon the diet of the cow)
germinated beans and grains

Suggestions for the Review Lessons

Use the Food Stencils or pictures of the different foods emphasized in the Food Score.

As each food is presented, review the reasons why this particular food is important to the body. Discuss the different foods that may be harmful to the body and why.

Reference Books

Feeding the Family—Rose
Dietetics for High Schools—Willard and Gillette
American Home Diet—McCollum and Simmonds
Newer Knowledge of Nutrition—McCollum
The Land of Health—Grace Hallock and C. E. A. Winslow
(C. E. Merrill Co. Pub.)

Bulletins and Magazines

Journal of Home Economics
Journal of American Medical Association
Child Care—West—Children’s Bureau, Washington, D. C.
Milk for the Family—Department Circular No. 129.
The School Lunch—Mary Ann Graber, Cooperative Home Economics Extension Circular No. 31, Montana State College.
Diet for Mother and Child—Martha Mae Hunter, Montana Extension Circular No. 67.
Planning the Family Meals.
Why Vegetables are Important in the Diet (with suggestions for preparation)
Constipation—causes, prevention, cure.
How to grow fat.
How to grow thin
Meats and Meat Equivalents
Left-Overs
Salads and Sandwiches
Desserts—frozen and unfrozen
Brief Summary—Newer Knowledge of Nutrition.
Food Habits Score
Health Score for Adults
Health Score for Children of School Age

Reference for Illustrative Material—Posters, Charts, Etc.
Elizabeth McCormick Memorial Fund, 848 N. Dearborn Street, Chicago, Illinois.
American Child Health Organization, 370 Seventh Avenue, New York City.