

Nutrition

CONTENT STANDARD: Life Science

CONTENT TOPIC: Anatomy

CONCEPT: Proper growth and development is dependent on many factors working together. (Personal Health)

CONTENT OBJECTIVE: To understand the role of diet for proper growth and development

INSTRUCTIONAL OBJECTIVES: The learner will:

- Identify the five nutrients and water that are needed for good health.
- Identify foods that contain protein and ways protein is used by the body.
- Identify foods that contain carbohydrates and ways carbohydrates are used by the body.
- Identify foods that contain fats and ways fats are used by the body

OUTLINE OF CONTENT:

- I. Five nutrients and water
 - A. Protein
 - B. Carbohydrates
 - C. Fats
 - D. Vitamins
 - E. Minerals
 - F. Water

GOAL: To enable students to demonstrate ways of thinking and acting inherent on the practice of science; and to exhibit an awareness of the historical and cultural contributions to the enterprise of science.

STANDARD(S): The learner will understand that: Science is based upon suppositions derived from observations of natural phenomena.

BENCHMARK: Careful observation can yield scientific knowledge.

The validity of an investigation cannot be accepted unless the complete investigation can be independently duplicated.

BENCHMARK: If variables remain constant an investigation can be repeated with expectations of predictable results.

CLASSROOM CONNECTORS

TIME REQUIRED: 35 minutes

MATERIALS: Balance scale, tablespoon, large container of solid fat (Crisco), gram weights, list of fat content

SET: Raise your hand if you ate breakfast this morning. Raise your hand if you think you ate a breakfast that provides everything your body needs until lunch time. How do you KNOW if you're getting everything your body needs from the foods you eat? Discuss. Choose 2 students as examples. Discuss whether their breakfast provided all they needed. Today, we are going to begin to discover what our bodies need healthy, what foods we need to eat to supply all our body's needs and what happens if we eat too much of the wrong things.

INSTRUCTION:

Emphasize that everything a person does requires energy and that the energy must come from the foods we eat. Write the term "nutrients" on the board and pronounce it for the students. Explain that nutrients are the parts of the food that provide energy and help the body grow. (Write under "nutrients":

- *water*
- *protein*
- *carbohydrates*
- *fats*
- *vitamins*
- *minerals*

(Ask:) "What do we need to stay alive?" (We all need healthy foods.) Have student's list water and what it does for the body: Water moves nutrients through the body. Water helps keep the body temperature normal. Water carries waste material out of your body. Every cell in your body needs water.)

Proteins are nutrients your body needs for growth and repair of your body cells. Carbohydrates are your body's main source of energy. Fats are the most concentrated form of energy and are used to transport and store some vitamins. Vitamins are nutrients that help your body use protein, fat, and carbohydrates. They help form bone and body tissues. Minerals are important for strengthening your bones and making your teeth strong. Two very important minerals are calcium and iron. Have students list foods for each of the nutrients.

Have you ever heard anyone say, "You are what you eat?" (response) What do you think this means?(response) The food we eat each day is our diet. A balanced diet will supply your body with the materials it needs for good health. One way to have a balanced diet everyday would be to eat something from each of the four basic food groups or a combination of these four. These groups are fruit and vegetables, milk, meat, and grain. What happens if we eat too much of any of these groups? Do we still have a "balanced" diet? What happens if we have too much fat in our diet? Let's look at some common foods and see how much of each nutrient it has.

SUPERVISED PRACTICE: Have the students form Six (6) teams of 3-4 students per team.

Our nutrients:

1. Give each team one list of foods and nutrients (below).
 2. Have as many balance scales and gram weights (as possible) per team.
 3. Have each team pick their favorite foods (4-5 or as time allows).
 4. Have each team gather some fat in a cup (younger students come get it from you).
 5. Begin to weigh each “food”.
 6. List in notebook how much fat each food contains.
- *In your notebook, list foods and their fat content.*

CLOSURE:

Today we have learned about nutrients.

1. Can you name the five nutrients? Protein, Carbohydrates, Fat, Vitamins, Minerals
2. Have the students work in small groups to list the various activities they engage in during a typical day. Discuss whether they need to eat more high-energy foods or more low-energy foods.
3. Why is it important to eat high-energy foods if we are active and low-energy foods if we are not very active?

FOOD ITEM	Fat (grams)	Food Energy (Calories)
APPLESAUCE, SWEETENED, 1 CUP	0	195
BANANA, 1	0	105
CHEESEBURGER, 4OZ PATTY	31	525
CHEDDAR CHEESE, 1 oz	9	115
CHEERIOS CEREAL, 1 oz	2	110
CHICKEN AND NOODLES, 1 cup	18	365
CHICKEN, FRIED DRUMSTICK, 2.5 OZ	11	195
CHOCOLATE CHIP COOKIES, 4	11	225
CHOCOLATE MILK, REGULAR, 1 cup	8	210
DOUGHNUTS, 1	12	210
EGG, SCRAMBLED, 1 egg	7	100
FISH STICK, 1 stick	3	70
HAMBURGER, 4OZ PATTY	21	445
ICE CREAM, VANILLA, SOFT SERVE, 1 cup	23	375
MACARONI & CHEESE, KRAFT, 1 cup	3	260
PANCAKES, 1	2	60
PEANUT BUTTER, 1 tbsp	8	95
PIZZA, CHEESE, 1 slice	9	290
PORK, BACON, 3 slices	9	110
POTATO CHIPS, 10 chips	7	105
POTATOES, FRENCH-FRIED, 10 slices	8	160
SPAGHETTI, MEAT SAUCE, 1 cup	12	330
STRAWBERRIES, RAW 1 cup	1	45
TACO, 1 taco	11	195
WHITE BREAD, 1 SLICE	1	65