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**ASSIGNMENT SHEET**  
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**MEAT, POULTRY, FISH, DRY  
BEANS, EGGS & NUTS GROUP**  
.....

DATE DUE \_\_\_\_\_

NAME \_\_\_\_\_ HOUR \_\_\_\_\_

**DIRECTIONS:** Complete all activities. A challenge project must be completed to earn an "A" on this unit. Put your unit together in the order listed below.

TEACHER    STUDENT

\_\_\_\_\_

1. A TO Z'S OF PROTEIN (20)

\_\_\_\_\_

2. PROTEINS DISCOVERY (20)

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3. THE EGG AND I CROSSWORD (20)

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4. COMPUTER PROGRAM (20)

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5. FIND THE FATS (20)

\_\_\_\_\_

6. MANAGEMENT OF CLASS TIME AND ROOM (20)

\_\_\_\_\_

7. SUMMARY SHEET (3 points per day)

\_\_\_\_\_

8. CHALLENGE PROJECT(S) (30 EACH)

\_\_\_\_\_

SHOPPING FOR PROTEINS

\_\_\_\_\_

CREAM PUFFS

\_\_\_\_\_

TOTAL

\_\_\_\_\_

GRADE

**SUMMARY SHEET**

Name \_\_\_\_\_ Date \_\_\_\_\_ Number \_\_\_\_\_

**Day One**

- 1.
- 2.
- 3.

**Day Two**

- 1.
- 2.
- 3.

**Day Three**

- 1.
- 2.
- 3.

**Day Four**

- 1.
- 2.
- 3.

**Day Five**

- 1.
- 2.
- 3.

**PROTEIN TRIVIA QUESTIONS**

1. **WHAT IS THE MOST COMMONLY ORDERED SIT-DOWN MEAL IN AMERICAN RESTAURANTS?**  
Fried chicken
2. **WHAT DELICACY IS KNOWN INDELICATELY AS PICKLED ROE?**  
Caviar
3. **WHO INVENTED PEANUT BUTTER?**  
George Washington Carver
4. **WHAT IS THE NAME OF DR. SEUSS'S EGG-HATCHING ELEPHANT?**  
Horton
5. **WHAT IS THE TERM FOR THREE STRIKES IN A ROW IN BOWLING?**  
A turkey
6. **WHAT FISH'S SKIN WAS ONCE USED COMMERCIALY AS SANDPAPER?**  
Shark's skin
7. **WHAT IS TRIPE?**  
Stomach
8. **WHAT IS THE MAIN INGREDIENT IN THE SOUP BOUILLABAISSSE?**  
Seafood
9. **WHO WROTE THE UGLY DUCKLING?**  
Hans Christian Andersen
10. **WHO IS THE WORLD'S RICHEST DUCK?**  
Scrooge McDuck
11. **WHAT MAKES GOOD SOUP AND ALSO WAS NAMED FOR THE GALAPAGOS ISLANDS?**  
Tortoises (Turtles)
12. **WHAT COUNTRY WOULD YOU HAVE TO VISIT TO SEE THE RUINS OF TROY?**  
Turkey
13. **WHAT DOES THE TYPICAL AMERICAN EAT 263 OF EACH YEAR?**  
Eggs
14. **WHAT IS THE NAME OF THE ASIAN DISH OF MEAT AND CHOPPED VEGETABLES ROLLED IN A THIN DOUGH?**  
Egg Rolls

PROTEINS-----TRIVIA, continued

15. TOFU IS OFTEN USED AS A MEAT SUBSTITUTE. WHAT IS IT MADE FROM?  
The soybean
16. WHAT ARE BOYS MADE OF?  
Frogs, snails and puppy dog tails
17. WHAT FRUIT IS USED FOR DYE IN THE GOVERNMENT'S MEAT INSPECTION STAMPS?  
Grapes
18. HOW MUCH DID A MCDONALD'S HAMBURGER COST IN 1963?  
15 cents
19. WHAT DELICACY IS PATE?  
Goose liver
20. WHAT IS THE MOST COMMON FOWL ON EARTH?  
Chicken
21. WHICH IS THE MOST TENDER? THE RIGHT OR LEFT LEG OF THE CHICKEN?  
The left leg
22. WHAT MAKES UP 12% OF AN EGG'S WEIGHT?  
The shell
23. WHAT IS THE ONLY BIRD THAT GIVES US LEATHER?  
The ostrich
24. WHAT IS THE HOG'S LARGEST LIVING RELATIVE?  
Hippopotamus
25. WHAT ANIMAL HAS THE HIGHEST BLOOD PRESSURE?  
Giraffe

## PROTEINS

Proteins are a part of all living things. All body cells are composed of proteins. They are needed for the growth and repair of body tissues such as muscles, blood, bones, hair, skin and nails. Proteins are constantly being broken down and need replacements. This need is even greater in children, adolescents and pregnant women.

Proteins are also important in making antibodies, the body's defense against infection, and in forming hormones, which help regulate body processes.

If enough carbohydrates and fats are not consumed, the body will burn proteins for energy.

Proteins are made up of amino acids, which are chemical compounds containing carbon, hydrogen, oxygen and nitrogen. There are about twenty-six amino acids. These amino acids form, break down and re-form into a lot of different proteins. At least eight of these are essential and cannot be made by the body, but must be consumed in the food we eat. The body will not be able to make new proteins if any one of these eight essential amino acids is lacking in the diet. The remaining nonessential amino acids can be produced by the body using the essential eight.

Foods of animal origin are complete proteins. These include meats, eggs, milk, seafood and poultry. Plant foods contain proteins but they are not complete. We call these incomplete proteins. Eating a combination of plant foods at one meal will enable the body to combine the proteins from the two sources and provide more of the essential amino acids. An example of this would be eating beans and rice together. Amino acids cannot be stored by the body so they need to be eaten every day.

Both the type and amount of protein in the typical American diet is more than we need to live and be healthy. The amount of protein we need each day can be found in two small servings of protein-rich foods. About 55 grams of protein is adequate.

Sometimes athletes believe that the more protein they eat the healthier and stronger they will be. If you eat more protein than you need, the extra protein is changed to glucose (blood sugar) and is either used for energy or stored as fat. Extra protein will not help build bigger muscles or give extra energy, but will be stored as fat.

### SUMMARY QUESTIONS:

1. How many amino acids are considered essential?  
EIGHT
2. Are meats and seafood complete or incomplete proteins?  
Complete
3. How many grams of protein is adequate in the diet?  
55 GRAMS

## TYPES OF PROTEIN FOODS

**DIRECTIONS:** Have each student in the class name a kind of food that belongs in the proteins group. Discuss the proper names for meat from a pig or hog (pork), cow (beef) deer (venison), chicken and birds (poultry) and sheep (lamb or mutton). Buffalo, turkey, bear and fish should also be included.

Be sure to include the non-meat sources such as legumes (dried beans, lentils and nuts) and eggs. These foods are all included in the proteins group because they are high in the nutrient protein.

A food from the proteins group is generally included as the main dish in a meal. Besides being very popular, it is also an important source of protein, iron and B vitamins. Meats, fish, poultry and soybeans are all sources of complete proteins--those that can be well utilized by the body because they contain all eight of the essential amino acids needed to build and repair tissues. (You could show the students eight blocks stacked together which signifies the essential building blocks of protein.) There are actually 26 amino acids needed by the body, but the body can make them if the eight essential are present. Soybeans are the only kind of bean that contain a complete protein.

According to federal law, meat sold between states must be inspected to insure its safety and sanitation. The USDA (United States Department of Agriculture) is responsible for inspecting meat. Inspected meat is identified with a purple federal inspection stamp. It is stamped on the wholesale cut only. Canned meats are also inspected. The stamp appears on each can.

### GRADING

The grading of meat is not required by law, but most packers choose to have their meat graded. The United States Department of Agriculture sets standards for different grades of meat. Beef is graded for quality and cutability. Quality refers to the proportion of meat to bone, degree of marbling in the lean, and color. Cutability refers to the proportion of edible meat: a greater amount of muscle in relation to a smaller layer of external fat. The top grade is Prime and makes up only a small portion of the carcass. It is usually sold only to restaurants. Choice is the second grade and Select is the third grade.

### MEAT LABELING

Most retail stores have adopted a meat labeling program for all red meats. The kind of meat is listed (beef, pork, lamb or veal), the wholesale cut (chuck, rib, loin or round) and the retail cut (blade roast, round steak, short ribs). The weight and the price per pound are listed. Ground beef usually lists the amount of fat present. The lean content of ground beef, by federal law, can never be less than 70%.

Consider wholesomeness (inspection), quality (grade), appearance and cost per serving when purchasing beef. You should plan around cost per serving rather than cost per pound. The amount of bone and fat in a cut determines the number of servings a pound will provide. Some boneless cuts, although priced higher than bone-in cuts, may be better buys because they have little waste.

**PROTEINS-----TYPES OF PROTEIN FOODS, continued****SUMMARY QUESTIONS:**

1. Why are foods other than meats included in this group?  
EGGS, LEGUMES AND NUTS ARE ALL HIGH IN PROTEIN.
2. Who is responsible for inspecting meat for safety and sanitation?  
THE UNITED STATES DEPARTMENT OF AGRICULTURE (USDA)
3. What are the three most common grades of meat?  
PRIME, CHOICE AND SELECT

## FATS

Fats are the most energy-rich nutrients. They provide more than twice the calories of an equivalent weight of carbohydrates or proteins. Fats contain nine calories per gram. Carbohydrates and proteins each contain about four calories per gram.

Fats contain certain fat-soluble vitamins that cannot be carried in water. Your body would not be able to use these vitamins without the help of fats. A lack of fats can slow growth and cause unhealthy skin. Too many fats cause extra pounds to be stored on the body and the blood cholesterol level to rise.

There are several kinds of fats. The terms saturated and unsaturated fats refer to the chemical structure of the different types of fat.

**SATURATED FATS:** All fats are composed of a carbon chain. The carbon chain of saturated fats is full of (or saturated with) hydrogen atoms. These tend to be solid at room temperature. They include butter, hard cheese, margarine, lard and most animal fats. Two exceptions to this rule are palm oils and coconut oils. They are used very often in processed foods because they are so inexpensive.

**CHOLESTEROL:** Cholesterol is another kind of fat. Its chemical formula is very different from the saturated or unsaturated kinds. Cholesterol is a white substance found normally in all body cells. It is needed by the body for many reasons. Making bile acids and nerve tissues are two of its functions.

Your body can make enough cholesterol to meet its needs without obtaining it from foods. Saturated fats cause the body to produce cholesterol which hardens the arteries. Eggs, organ meats (liver), red meats, butter, milk and some shellfish--all foods of animal origin--are high in cholesterol. It is wise to form the habit of eating small amounts of foods high in cholesterol early in life because often these eating patterns are carried on into adulthood. Cholesterol begins to clog arteries even early in life.

**UNSATURATED FATS:** Unsaturated fats do not have all of the chemical bonds in the carbon chain full of hydrogen atoms. These fats are generally liquid at room temperature and are of vegetable origin. Some examples are corn oil, soybean oil, cottonseed oil, sesame oil, safflower oil and sunflower oil and some fish oil. Unsaturated fats may actually reduce the level of cholesterol in the blood.



PROTEINS-----FATS, continued

**SOME WAYS TO AVOID EXCESS FAT AND CHOLESTEROL IN YOUR DIET:**

1. When choosing your protein sources, eat lean meat, fish, poultry and dry beans and peas.
2. Trim the fat from meat and take the skin off poultry. Do not add fancy sauces.
3. Go easy on eating egg yolks and organ meats.
4. Buy skim or low-fat milk and milk products.
5. Avoid fats and oils, especially those high in saturated fats, such as butter, cream, lard, hydrogenated (solid) shortenings and margarines and foods with palm and coconut oils.
6. Get into the habit of broiling, baking or boiling instead of frying. Avoid foods that are breaded and deep-fried.

**SUMMARY QUESTIONS:**

1. What kind of fats are usually solid at room temperature?  
**SATURATED**
2. What kind of fats are usually of vegetable origin?  
**UNSATURATED**
3. Name two ways to avoid excess fat in the diet.  
**ANY TWO: EAT LEARN, TRIM THE FAT, AVOID EGG YOLKS AND ORGAN MEATS, AVOID FATS AND OILS, BROIL, BAKE OR BOIL FOODS**

## POULTRY

Poultry refers to all types of fowl served as the main part of a meal. Chicken and turkey are probably the most common types, although duck, geese, guinea and Cornish hens, squab and pigeons are other kinds.

Chicken was once reserved for a Sunday or holiday treat as it was quite expensive. Now it is often served any day of the week, because it is a low-cost and low-fat food that contains high quality protein.

You should look for inspection and grade labels when choosing poultry; they are clues to quality. This is your assurance that the poultry comes from healthy birds and is processed in sanitary surroundings. There are three different grades. Grade A poultry is full-fleshed and meaty. Grade B is good quality and is slightly less meaty. Grade C has less flesh and fat.

### COOKING POULTRY

Poultry is classified by age and weight and is referred to as broilers, fryers, roasters and stewing birds. Young birds are tender; older birds are less tender. For young birds, broiling and roasting are preferred methods. For older birds it is wise to braise or cook in liquid. Whatever method you choose, be sure to use a low or moderate temperature so the meat is not toughened. When stewing poultry, the water should be simmering and not boiling.

Before preparing, rinse the cut pieces in cold water. If the bird is whole, run cold water into the cavity and remove any internal organs. The liver, heart, and gizzard are sometimes wrapped and placed inside the bird's cavity. These are called the giblets. Some people use the giblets as flavoring for sauces or gravies.

Dry the washed poultry with paper towels. If you are using a frozen bird, let it thaw by refrigerating it for 24 hours. When choosing frozen poultry, look for freezer burn which indicates long and improper storage and check the wrapper to be sure it is not stained or broken.

### STORING POULTRY

Poultry is a very perishable food. Whole birds will last longer than cut-up birds. When storing, it should be wrapped loosely in wrap and stored in the coldest part of the refrigerator for only two to three days. It may be stored for up to a year if wrapped well in freezer wrap and frozen.

### SUMMARY QUESTIONS:

1. When stewing an older bird, do not let the water do what?  
BOIL
2. What are the liver, heart, and gizzard called?  
GIBLETS
3. How long will fresh poultry last in the refrigerator?  
TWO OR THREE DAYS

## EGGS

### PARTS OF THE EGG:

The shell of the egg is porous and it permits moisture and gases to pass through. On the outside of the shell there is a thin film called the bloom which helps seal the pores and protect the egg from becoming contaminated. The color of the shell may be brown or white. This depends on the breed of the chicken. There are no nutritional differences between brown or white eggs.

The white portion of the egg is called the albumen. The white also contains a thick and thin part. Fresh eggs will contain more thick white than older eggs. The thick white gives a high, rounded appearance when it is broken. In a fresh egg, the yolk is high, rounded and centered in the thick white. It is important to use only high quality eggs that are clean with no cracks in the shell.

### GRADE AND SIZE

Eggs are graded by the U.S.D.A. The freshness of an egg is determined by candling. Most eggs pass on rollers over high-intensity lights that allow the grader to look at the egg interior. Originally, this was done by passing the eggs before a candle. This process is therefore called candling. The freshest egg has a small air space and a thick white which supports the rounded yolk.

The freshness of an egg refers to its quality and not its size. The freshest eggs are Grade AA, then Grade A and Grade B. The color of the shell has nothing to do with quality or grade. Eggs are classified according to size and weight. The egg carton has a label which indicates the grade (freshness) and the size of the egg. When there is seven cents or less between sizes--buy the larger size and you get more egg for your money.

### EGG COOKERY:

Because of the egg's high protein content, it is important not to use high temperatures and not to overcook them. Eggs serve many functions in cookery and are used in many different recipes.

1. **NUTRIENTS**--The nutrients in eggs are very well balanced. The yolk is the rich source of nutrients. The white contains mostly protein which is complete because it comes from an animal source. The egg white also contains riboflavin which is another name for Vitamin B2. The yolk contains vitamins A and D and Vitamin B2. Besides fish liver oils, egg yolks are one of the few natural foods to contain Vitamin D. It is called the sunshine vitamin because when the sun shines on the skin, it converts the skin's oils into Vitamin D. The yolk also contains iron and phosphorus. Iron is essential for the formation of hemoglobin which is the red pigment of the blood. Hemoglobin carries oxygen to body cells. The yolk also contains some fat. The fat-soluble vitamins A and D are found there.

The egg yolk contains a large amount of cholesterol, although this amount has been lowered through scientific research. It is now recommended that healthy people may safely eat up to four eggs a week.

PROTEINS-----EGGS, continued

Egg substitutes have been developed which are lower in fat, cholesterol and calories. Some are made with partial-eggs and some are made with no eggs at all. These egg substitutes have about one-half of the calories and fat found in regular eggs and also less sodium. The fat in the eggs is substituted with vegetable oil. The substitutes have a different flavor than real eggs, but they blend well with other ingredients in cooked foods.

2. **THICKENING AND BINDING AGENT**--The protein in the egg coagulates or clots when heated and can thereby thicken dishes when cooked. It is used to thicken custards, form the outer shell of cream puffs, bind together meat loaves, and hold the crumbs together when used as a coating.
3. **LEAVENING AGENT**--When air is beaten into eggs, they can be used as a leavening agent. The egg whites are beaten and each air bubble is surrounded with the white. When the foam is heated, the air bubbles expand and the egg white stretches. This produces a light, porous product.
4. **EMULSIFYING AGENT**--An emulsion is a mixture of oil and another liquid beaten together so that they will not separate. The egg yolk is the emulsifying agent because the proteins in it surround tiny globules of oil and keep them from separating. This is done in cakes, popovers and mayonnaise.

Eggs cooked in the shell should be referred to as hard-cooked or soft-cooked rather than hard-boiled or soft-boiled. They should be heated to only a simmering temperature, not a boiling one. Boiling water causes over-coagulation and toughness. The length of time the eggs are immersed in simmering water will determine how well-done the eggs are. Sometimes eggs will develop a dark green ring around the outer surface. This means the eggs were overcooked or cooked in boiling rather than simmering water. The green color develops when the iron and the sulfur in the egg combine. Cooling eggs by immersing them in cold water immediately after cooking helps to eliminate this problem.

Eggs should be stored in their original container in the refrigerator. This is because they are porous and can pick up other odors in the refrigerator. Store eggs with the blunt end up to avoid movement of the yolk and the air cell.

**SUMMARY QUESTIONS:**

1. Which is the freshest grade of eggs?  
GRADE AA
2. What is the major nutrient found in egg white?  
PROTEIN
3. Name the four major functions of eggs in cooking.  
ADDING NUTRIENTS, FOR THICKENING, LEAVENING AND AS AN EMULSIFYING AGENT

## SEAFOOD

Seafood can be divided into two general groups: finfish and shellfish. Finfish comes from both saltwater and freshwater and has scales and fins. Shellfish are known as mollusks and are enclosed in a hard shell. Some examples of mollusks are oysters, clams and scallops. Crustaceans are the other type of shellfish and have a segmented outer shell. Some common examples of crustaceans are lobsters, crabs and shrimp.

Fish contains much less fat than red meats. The flesh of fish with a high fat content is yellow, pink or gray in color while the flesh of fish with less fat is white. Fat fish includes salmon, mackerel and tuna; the lean fish includes haddock, cod and halibut. Most of the shellfish have little fat and are lean.

### FORMS OF FISH

Fish is available in many different forms. It is fresh, frozen, canned, cured and pickled. Pickled fish is cured in a brine that contains vinegar and pickling spices. After being heat processed, the pickled fish is packed into jars. About half of the fish in the United States is fresh or frozen.

Most commonly found in markets are whole or round fish. This is fish as it is just from the water. The scales and insides must be removed before it is cooked. Drawn fish has had only the insides removed. Dressed fish is ready for cooking. Fish steaks are cross-section slices of dressed fish. Very large fish such as halibut and salmon are usually sold as steaks. A fillet comes from one side of the fish.

The inspection and grading of fish for wholesomeness is voluntary. The United States Department of Interior supervises the grading program and identifies it with an inspection stamp.

The nutrients contributed by fish are similar to those of meat. They both contain complete proteins, minerals, vitamins and fat. Fish contains less fat than meat. Because of this, it will supply fewer calories.

Fish contains iodine, which helps regulate the thyroid gland. No other food contains an adequate supply of this mineral. For this reason, it is added to salt. Look on the label for the word iodized to make sure you are getting enough of this nutrient. Without enough iodine, the thyroid gland must work extra hard and enlarges, causing a condition called a goiter.

### FISH COOKERY

Because fish is high in protein, it needs to be cooked at low temperatures to prevent toughening. Fish contains little connective tissue and cooks quickly. If it is cooked too long, it is apt to break apart.

All fish is tender and may be cooked by dry heat or moist heat methods. The fatty fish are best cooked by dry-heat methods and the lean fish by moist heat methods. Most of the time, fish is broiled, baked or poached. Poaching fish is done in gently simmering, seasoned water in a covered pan. The fish should be tied in cheesecloth to prevent it from breaking apart.

### STORING FISH

All fish is very perishable. Fresh fish should be wrapped tightly in paper and placed in a covered container in the coldest part of the refrigerator. This prevents its odor from penetrating other foods. Fish should be used within a day or stored in the freezer.

There are many convenience forms of fish. They include frozen fillets, steaks, fish sticks, pies and chowders. Remember that one usually has to pay a higher price for foods that have been processed.

### SUMMARY QUESTIONS:

1. What are the two general types of seafood?  
FINFISH AND SHELLFISH
2. What do mollusks have on them?  
A HARD SHELL
3. What is the main nutrient contribution of fish that is not contained in other foods?  
IODINE

## DRIED LEGUMES

Legumes are the fruit or seed of a pod-bearing plant such as peas, beans, lentils and peanuts. These foods are rich in protein and when balanced with other foods can be used as substitutes for meat. In many parts of the world people eat them every day as their main food.

These foods are the seeds of the plants. All the nutrients needed to carry on the life of each plant are stored in these seeds. As protein is needed to make and repair cells, it is also stored here. Soybeans are the only complete protein food in plants. Other legumes lack the eight essential amino acids needed to be used completely by the body.

Dried beans, beans, lentils and nuts supply an important source of iron. A half cup of dried cooked beans supplies as much iron as a large hamburger and almost as much as two eggs.

Probably the most popular bean in the United States is the navy bean. It got its name because it was frequently used by military groups as a major part of their diets. Navy beans are used in New England baked beans. In the southern United States the red bean or kidney bean is preferred and used often in main dishes with tortillas.

The soybean has been a favorite food in the Orient for years. Until recently, it has mainly been used for livestock food in our country. The soybean is an excellent food. It is currently used extensively for soybean oil and in processed imitation meats. It contains all the essential amino acids. It contains no carbohydrate and can be eaten by diabetics.

Nuts are high-protein, high-fat, high-carbohydrate, high-fiber foods rich in the indigestible food fibers. If nuts are exposed to air, the carbon atoms in the molecules of unsaturated fatty acids they contain will pick up oxygen atoms, turning the nuts rancid. This process can be slowed by protecting the nuts from air, heat and light, but it can never be completely stopped.

Peanuts are the most important in this group and are used in a variety of foods. Actually, the peanut is not a true nut, but a bean that turns its blossom down into the soil, developing underground. In this country, peanuts are used in oil, for sandwiches, in cookies, cake frostings, and soups. In Africa, peanuts are used extensively in stews, soups and as a topping.

There is more protein in a pound of shelled peanuts (117 grams) than in a pound of beef sirloin (80 grams). Five tablespoons of peanut butter supply the same amount of protein as a large hamburger. However, the protein in the meat contains all the essential amino acids, so it is of higher quality. Legumes are a much more economical source of protein than are meats.

PROTEINS-----LEGUMES, continued

With the exception of peanuts, nuts are used only occasionally and as flavorings. They are high in calories because of their high fat content. Almonds are not actually true nuts, but the pit of a fruit related to the peach.

Purchase fresh nuts with clean, undamaged shells. The nuts should feel heavy for their size; nuts that feel light may be withered inside.

### COOKING BEANS

Look the beans over for stones, dirt or hulls. Throw away any beans that float. Only withered beans are light enough to float in water. Cover the beans with water, bring them to a boil and then set them aside to soak. This two-minute soak hastens the softening of the beans, helps them absorb water faster and helps keep the skins from breaking. When you are ready to use the beans, discard the water in which they have been soaked. Some of the indigestible sugars in the beans that cause intestinal gas will leach out into the water, making the beans less gassy. Add the seasoning of your choice to add good flavor and cook until they are done, which is usually about 2-3 hours.

### SUMMARY QUESTIONS:

1. Give three examples of legumes.  
PEAS, BEANS, LENTILS, NUTS
2. What legume is the only complete source of protein?  
SOYBEANS
3. What happens to nuts when they are exposed to air, heat or light?  
THEY GO RANCID.



## RED MEATS

Meat from cattle over one year old is known as beef. It is bright red in color and its fat is white or cream colored. The beef carcass is divided into sides and then divided again into quarters and hung for a while to tenderize before cutting. Only three of these cuts of beef, the rib, the loin and the sirloin are tender. Different cuts from the carcass must be cooked using different methods.

Veal is meat from cattle three to fourteen weeks old. Veal is pink in color and lacks fat and marbling (flecks of fat in the meat). It has a very delicate flavor and is somewhat scarce and very expensive.

### PORK

Pork comes from hogs not more than a year old. The color of young pork is grayish pink changing to a rosy color as it matures. The lean is well-marbled and is covered with a white fat. All cuts of pork must be thoroughly cooked to prevent the disease trichinosis which can be fatal. Trichinosis is a parasite which lives in the hog, but is killed by completely cooking the meat. Make sure the cooked meat is white in color--never pink--or use a cooking thermometer.

Bacon and ham are treated with salt, sugar and chemicals and then smoked. Bacon comes from pork sides and ham comes from the hind leg of a hog.

### LAMB

Lamb is the smallest animal used for meat. Lamb is not more than fourteen months old. Lamb is dark red and the fat is white. Mutton is the meat from mature sheep. Its meat is dark red and the fat is a creamy color.

### VARIETY MEATS

The organs of meat are known as variety meats. They include brains, liver, kidney, heart, tongue, sweetbreads (thymus gland) tripe (stomach lining of beef) and liver. Organ meats are high in nutrients.

### SUMMARY QUESTIONS:

1. What is the proper name for cattle 3-14 weeks old?  
VEAL
2. What part of the hog does ham come from?  
THE HIND LEG
3. What is the general name for liver, brains and sweetbreads?  
VARIETY MEATS

## MEAT COOKERY

Meat is cooked for many reasons. It is cooked to improve its flavor, change its color, make it more tender and destroy harmful organisms. The method used to cook the meat will greatly influence the resulting taste and texture of the dish.

Because meats are a high protein food, they require low cooking temperatures. High temperatures will over-coagulate the meat protein and make it tough. Overcooking will also cause toughening due to over-coagulation.

Meats are classified into tender and less tender cuts. Less tender cuts of meat have more connective tissue. Connective tissue is long, tiny fibers of muscle tissue. Connective tissue is made of a different protein than that in muscle tissue. It is tough and flexible and holds the muscle fibers together. It can be softened by cooking, but still will not be as tender as those cuts that are tender to begin with.

### MOIST HEAT METHODS OF COOKING

Moist heat methods of cooking are used for less tender cuts so the large amounts of connective tissue in them will be softened by the moisture and heat.

The meat may be browned first and then moisture from the meat itself or added liquid is used to steam the meat in a covered pan.

Stewing and simmering refer to cooking in liquid. When large pieces of meat are used, it is called simmering. When small pieces of meat are used, it is called stewing.

### DRY HEAT METHODS OF COOKING

Tender cuts of meat have less connective tissue and may be cooked by different methods.

When roasting, a large tender cut of meat is used in a shallow, open pan with a rack. The meat is placed on the rack with the fat side up. The rack allows fat to drip away from the meat and also allows the heat to circulate around and under the roast.

Broiling is cooking meat above or below the direct source of heat from an oven unit or glowing coals. Meat is placed on a rack, 3 to 6 inches away from the heat. When the meat is half-done, it is turned in order to cook the other side. It should be salted after cooking, because salt retards browning.

### PAN BROILING

Pan-broiling is cooking meat in a skillet without added fat. As the fat melts from the meat, it is poured off. Never cover the meat or add water; to do so would be braising. Pan broiling is used for small, tender cuts of meat.

### COOKING WITH FAT

Frying is a quick method of cooking and is best for thin pieces of meat which are already tender or have been made tender by cubing, pounding or grinding. The meat may be first rolled in flour or crumbs before frying.

Pan frying is cooking in a small amount of fat in an uncovered skillet. When pan-frying the fat is not poured off as it accumulates as in pan broiling. Use low to moderate temperatures as high temperatures will cause the meat to smoke and make the meat tough.

### DEEP FAT FRYING

In deep fat frying, the food is placed in the cooking utensil in enough fat to cover the food. It is best for meats that have been breaded or dipped in batter. A high temperature is used for deep-fat frying, so the oil is not absorbed as much by the meat. The breading should help protect the meat from the hot fat.

### SUMMARY QUESTIONS:

1. What kind of cookery should be used for tender cuts of meat?  
DRY HEAT METHODS
2. What kind of cookery should be used for less tender cuts of meat?  
MOIST HEAT METHODS
3. Should tender or less tender cuts of meat be used for frying?  
TENDER CUTS

## NUTRIENT DENSITY

### DIRECTIONS:

Copy the foods below to be used on the board. Leave the %STD for protein, calories and the fat grams blank for now.

Give each student a different comparison card from the proteins group and ask the following questions:

1. What are nutrients? (Chemical substances needed to keep our bodies running efficiently and keep us healthy)
2. What does dense mean? (Thick or full)
3. What kinds of foods are nutrient dense? (Those full of nutrients--we consider this in relation to the calories a food contains.)
4. What lines are the longest on the food you have? (Protein and B Vitamins) These are the main nutrients found in this food group.
5. What is the average serving size of a protein food? (3-4 oz.)  
Use a scale and measure some hamburger or some other meat to show this serving size.
6. How many grams of protein does a person your age need according to the RDAs? (Have a student look it up. 45 grams for males--46 grams for females)
7. As I call out the following foods, tell me its % STD of the RDAs is and how many calories it contains.

The fat grams have been included because of the new research on their importance to good health.

FOOD	SERVING SIZE	PROTEIN %STD	CALORIES	FAT GRAMS
BACON	3 strips	19%	134	12
BLACK-EYED PEAS	1/2 cup	21%	110	1
BOILED EGG	1 large	18%	83	5
BOLOGNA	1 slice	8%	58	8
FISH STICK	3 sticks	32%	121	8
FRANKFURTER	1 wiener	15%	134	13
FRIED CHICKEN	3 oz.	72%	212	10
FRIED EGG	1 large	18%	99	6
HAM	3 oz.	49%	246	13
HAMBURGER PATTY	3 oz.	65%	186	17
LIVER	3 oz.	62%	195	5
MEAT LOAF	3 oz.	45%	208	15
PEANUT BUTTER	2 Tbsp.	22%	188	16
PEANUTS	1/4 cup	26%	211	18
PORK CHOP	3 oz.	58%	332	23
ROAST BEEF	3 oz.	56%	295	15
SCRAMBLED EGG	1 large	21%	111	7
T-BONE STEAK	3 oz.	46%	402	25
TUNA	1/3 cup	42%	104	1
TURKEY	3 oz.	75%	160	3

## PAN BROILING EXPERIMENT--DRY HEAT METHOD

**EXPERIMENT**--Use two meat patties of the same weight and diameter. Pan fry one at a high temperature and the other at a low temperature. Compare the weight, size, tenderness and moistness of each and record the results on the Pan Broiling Meat Experiment Chart. The following information about meat cookery may be given during the experiment.

**COOKERY**--Meat is cooked to improve its flavor, change its color and aroma, make it more tender and destroy harmful organisms.

Muscle fibers, which we eat as meat, are held together by connective tissue. A protein called collagen is tough and elastic and makes up the connective tissue that holds muscle fibers together. This can be softened by cooking.

Meats are classified into tender and less tender cuts. The tender cuts contain less connective tissue than the less tender cuts. The tender cuts of meat come from muscles which are rarely exercised.

Using a low temperature to cook meat will coagulate the meat protein and prevent toughening. Meats should be cooked only until they are done; otherwise the protein over-coagulates and the meat becomes dry and tough. The tender cuts of meat contain little connective tissue and need to be cooked only long enough to coagulate the protein.

Roasting, broiling, and pan broiling are the dry heat methods for cooking meat.

**ROASTING**--Roast meat by placing it in a large pan in the oven. Use low temperatures (300 to 350 degrees) for best results. Use a meat thermometer to test for doneness. Insert the thermometer into the thickest part of the meat, away from the bone and fat. Meat will continue to cook for a time after removal from the oven. Beef can be cooked rare (red color), medium (pink color) or well-done (brown color). Veal, lamb and pork are usually cooked until well done.

**BROILING**--This is cooking meat above or below a direct source of heat such as in the broiler in an oven. Meat is placed on a rack which allows fat and juices to fall through the rack and drain off the meat. The larger the piece of meat, the farther it should be kept from the source of heat. When the meat is half done it is turned to the other side.

**PAN BROILING**--This is cooking meat in a skillet without adding extra fat. As the fat melts, it should be poured off. After the meat is brown on one side it should be turned over. Do not cover the meat or add water as this would be braising and not pan broiling.

PROTEINS-----PAN BROILING EXPERIMENT, continued

**SUMMARY QUESTIONS;**

1. What is the type of tissue which hold muscle fibers together?  
CONNECTIVE TISSUE
2. Name three dry heat methods for cooking meat.  
ROASTING, BROILING, PAN BROILING
3. Using a low temperature to cook meat should prevent what?  
TOUGHENING

MEAT, POULTRY, FISH, DRY BEANS, EGGS & NUTS GROUP ----- INDIVIDUALIZED ACTIVITY

Name \_\_\_\_\_ Class \_\_\_\_\_

**PAN BROILING MEAT EXPERIMENT**

After observing the demonstration in class on cooking meat, record the data from the experiment below and answer the questions. (two points each)

Two points each	High Heat Sample #1	Low Heat Sample #2
1. Pre-cooked weight		
2. Pre-cooked diameter		
3. Cooking temperature		
4. Post-cooked weight		
5. Post-cooked diameter		
6. Post-cooked Appearance		
7. Post-cooking tenderness: 1=very tender 5=tough		
8. Post-cooking moistness 1=very moist 5=dry		

(ONE POINT EACH)

17. Which method of cooking above would you recommend for cooking hamburger?
18. Which nutrient in meat greatly influences the way meat should be cooked?
19. Explain how to broil meat.
20. Explain how to pan broil meat.

MEAT, POULTRY, FISH, DRY BEANS, EGGS & NUTS GROUP ----- INDIVIDUALIZED ACTIVITY

NAME \_\_\_\_\_ CLASS \_\_\_\_\_

### A TO ZS OF PROTEIN

**DIRECTIONS:** Fill in the names of these protein foods below. Use your classroom textbook as a guide. **DO THIS WORK ON YOUR OWN PAPER. WORDS MUST BE SPELLED CORRECTLY TO RECEIVE CREDIT.**

1. A \_\_\_\_\_ Small salty fish that is dried, pickled or canned.
2. B \_\_\_\_\_ Made from the side of a hog.
3. C \_\_\_\_\_ Rhymes with a spicy yellow condiment. It is a sweetened milk mixture thickened with egg.
4. D \_\_\_\_\_ These evil snacks made from the product of a hard working chicken have been dewinged.
5. F \_\_\_\_\_ Found in the thick layer around meat or in the middle and known as marbling.
6. G \_\_\_\_\_ Edible organs of poultry: liver, heart, gizzard.
7. H \_\_\_\_\_ Made from the hind leg of a hog which is cured and smoked.
8. I \_\_\_\_\_ Pans are sometimes made of this. It is found in meats. It gives blood its red color and forms hemoglobin.
9. J \_\_\_\_\_ Southern rice dish served with fish, ham or sausage.
10. L \_\_\_\_\_ Variety meat rich in many nutrients including iron.
11. M \_\_\_\_\_ Meat from mature sheep.
12. O \_\_\_\_\_ French dish made from beaten whole eggs with added meats and vegetables.
13. P \_\_\_\_\_ The top quality grade of beef.
14. R \_\_\_\_\_ To cook meat in the oven or a large cut of meat.
15. S \_\_\_\_\_ Some swimming examples are oysters and clams.
16. T \_\_\_\_\_ The Thanksgiving centerpiece.
17. V \_\_\_\_\_ Meat from cattle 3 to 14 weeks old.
18. W \_\_\_\_\_ These can be whipped up into a meringue.
19. Y \_\_\_\_\_ A sunny center that contains Vitamins A and D, riboflavin, fat, iron and phosphorus.
20. Z \_\_\_\_\_ Two all-beef patties, special sauce made in a make-believe fast food place that rhymes with Dee's



## MEAT, POULTRY, FISH, DRY BEANS, EGGS &amp; NUTS GROUP

\*\*\*KEY\*\*\*

## A TO ZS OF PROTEIN--KEY

1. ANCHOVY Small salty fish that is dried, pickled or canned.
2. BACON Made from the side of a hog.
3. CUSTARD Rhymes with a spicy yellow condiment. It is a sweetened milk mixture thickened with egg.
4. DEVILED EGGS These evil snacks made from the product of a hard working chicken have been dewinged.
5. FAT Found in the thick layer around meat or in the middle and known as marbling.
6. GIBLETS Edible organs of poultry: liver, heart, gizzard.
7. HAM Made from the hind leg of a hog which is cured and smoked.
8. IRON Pans are sometimes made of this. It is found in meats. It gives blood its red color and forms hemoglobin.
9. JAMBALAYA Southern rice dish served with fish, ham or sausage.
10. LIVER Variety meat rich in many nutrients including iron.
11. MUTTON Meat from mature sheep.
12. OMELET French dish made from beaten whole eggs with added meats and vegetables.
13. PRIME The top quality grade of beef.
14. ROAST To cook meat in the oven or a large cut of meat.
15. SHELLFISH Some swimming examples are oysters and clams.
16. TURKEY The Thanksgiving centerpiece.
17. VEAL Meat from cattle 3 to 14 weeks old.
18. WHITES These can be whipped up into a meringue.
19. YOLK A sunny center that contains Vitamins A and D, riboflavin, fat, iron and phosphorus.
20. ZEE BURGER Two-all beef patties, special sauce made in a make-believe fast food place that rhymes with Dee's.

MEAT, POULTRY, FISH, DRY BEANS, EGGS &amp; NUTS GROUP-----INDIVIDUALIZED ACTIVITY

NAME \_\_\_\_\_ CLASS \_\_\_\_\_

**PROTEINS DISCOVERY**

Use the comparison cards to find the following information.

FOOD	Serving (size)	Calories (Kcal)	% Protein	% Iron	% of 2000 cal.	% of daily fat budget
1. Chef's Salad						
2. Deluxe Pizza						
3. Spaghetti & Meatballs						
4. Cheese Burger						
5. Taco						
6. Chicken Noodle Soup						
7. Cream of Tomato Soup						
8. Chili						
9. Macaroni & Cheese						
10. Submarine Sandwich						

11-12. Which two are the best sources of protein per serving?

13-14. Which two are the best sources of iron per serving?

15-16. Which two have the highest percentage of the daily fat budget?

17-18. Which two have the lowest percentage of the daily fat budget per serving?

19-20. Which two do you like the most?

MEAT, POULTRY, FISH, DRY BEANS, EGGS &amp; NUTS GROUP

\*\*\*KEY\*\*\*

## PROTEINS DISCOVERY--KEY

ONE POINT FOR EACH CORRECT NUMBER. 20 POINTS TOTAL POSSIBLE.

FOOD	Serving (size)	Calories (Kcal)	% Protein	% Iron	% of 2000 cal.	% of daily fat budget
1. Chef's Salad	1 1/2 cups	267	58	11	13	24
2. Deluxe Pizza	1/4 pizza	303	47	14	15	13
3. Spaghetti & Meatballs	1 cup	330	42	21	17	18
4. Cheese Burger	Regular	359	40	15	18	30
5. Taco	1 small	370	47	13	19	31
6. Chicken Noodle Soup	1 cup	75	9	4	4	3
7. Cream of Tomato Soup	1 cup	160	13	10	8	9
8. Chili	1 cup	254	56	29	13	12
9. Macaroni & Cheese	1 cup	430	38	10	22	33
10. Submarine Sandwich	3-4" sub	228	24	7	11	13

(TWO POINTS EACH)

11-12. Which two are the best sources of protein per serving?

CHEF'S SALAD, CHILI

13-14. Which two are the best sources of iron per serving?

CHILI, SPAGHETTI AND MEAT BALLS

15-16. Which two have the highest percentage of the daily fat budget?

MACARONI AND CHEESE, TACO

17-18. Which two have the lowest percentage of the daily fat budget per serving?

CHICHEN NOODLE SOUP, CREAM OF TOMATO SOUP

19-20. Which two do you like the most?

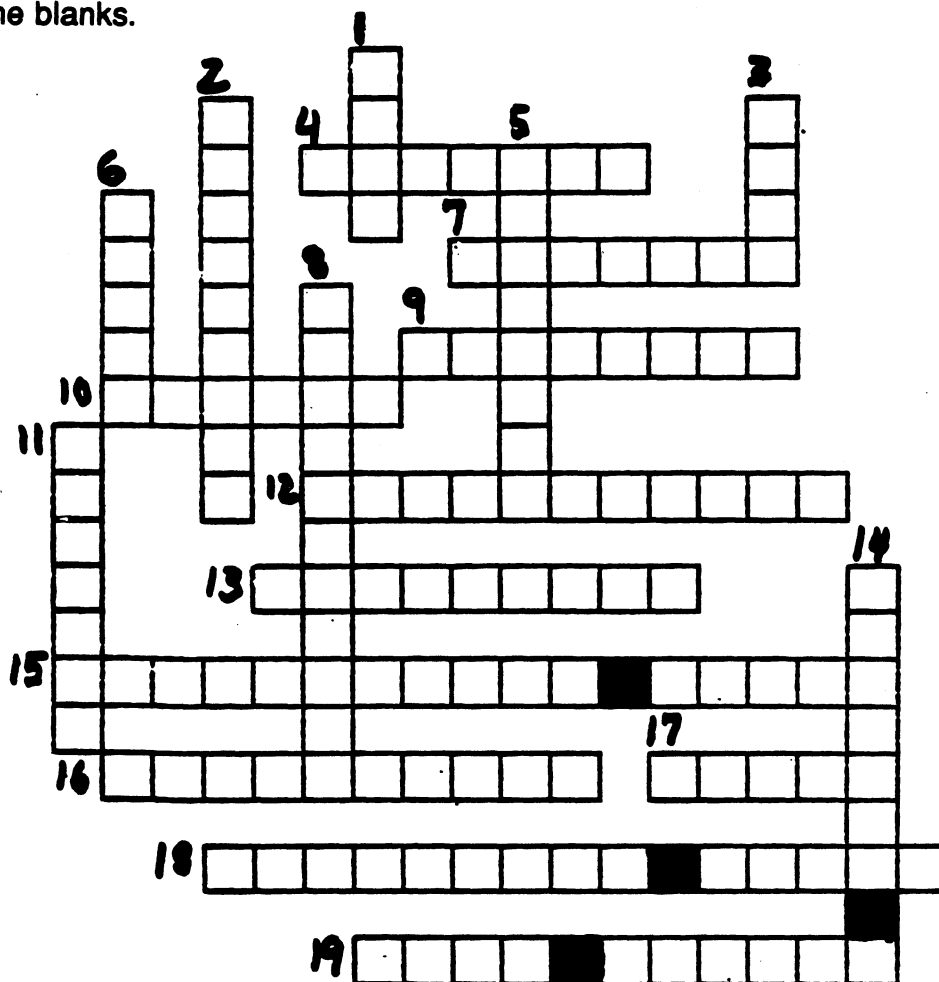
VARIED ANSWERS

## MEAT, POULTRY, FISH, DRY BEANS, EGGS &amp; NUTS GROUP-----INDIVIDUALIZED ACTIVITY

NAME \_\_\_\_\_ CLASS \_\_\_\_\_

## THE EGG AND I CROSSWORD

DIRECTIONS: Read the chapter in your textbook that deals with eggs, then fill in the blanks.

**ACROSS**

1. Usually this color, it depends on what the hen eats.
4. The egg white.
7. Nutrient in eggs that's "complete".
9. Method of grading eggs.
10. Egg dish that contains a filling and is then folded over.
12. Egg yolks are high in this fat.
13. When a food clots or solidifies.
15. A function of eggs.
16. Iron forms this substance which helps prevent anemia.
17. Thin film which seals the pores of the egg shell.
18. Function of eggs which helps make products rise.
19. An egg in its shell should be cooked this way, not boiled.

**DOWN**

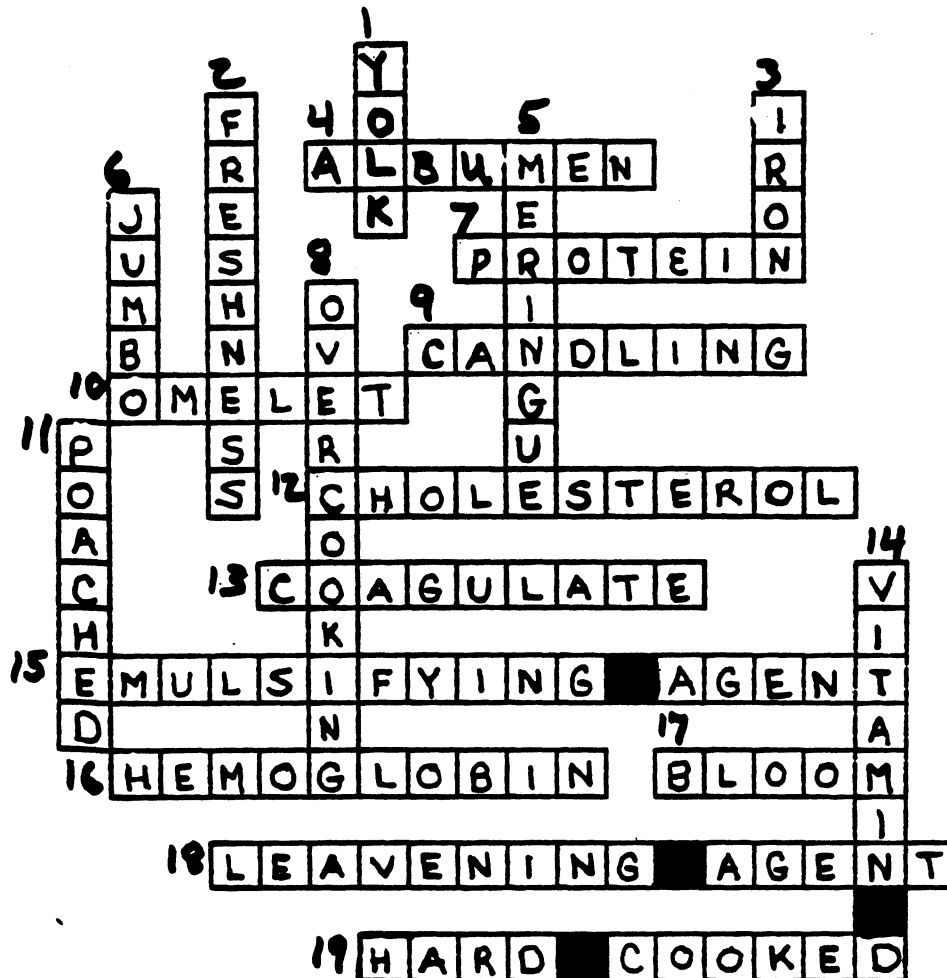
1. Egg part that contains the nutrients.
2. Grade is an indication of this.
3. The strong mineral found in the yolk.
5. Stiffly beaten egg whites with sugar.
6. Largest size of eggs.
8. This causes toughness in eggs.
11. Eggs cooked by simmering in water.
14. Nutrient found in eggs that is not found in most other foods.

MEAT, POULTRY, FISH, DRY BEANS, EGGS &amp; NUTS GROUP

\*\*\*KEY\*\*\*

## THE EGG AND I CROSSWORD--KEY

One point for each correct answer. 20 points possible.

**ACROSS**

1. Usually this color, it depends on what the hen eats.
4. The egg white.
7. Nutrient in eggs that's "complete".
9. Method of grading eggs.
10. Egg dish that contains a filling and is then folded over.
12. Egg yolks are high in this fat.
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17. Thin film which seals the pores of the egg shell.
18. Function of eggs which helps make products rise.
19. An egg in its shell should be cooked this way, not boiled.

**DOWN**

1. Egg part that contains the nutrients.
2. Grade is an indication of this.
3. The strong mineral found in the yolk.
5. Stiffly beaten egg whites with sugar.
6. Largest size of eggs.
8. This causes toughness in eggs.
11. Eggs cooked by simmering in water.
14. Nutrient found in eggs that is not found in most other foods.

NAME \_\_\_\_\_ CLASS \_\_\_\_\_

## FIND THE FATS

Fats are the most energy-rich nutrients. They provide more than twice the calories as an equivalent weight of carbohydrates or proteins. Fats contain nine calories per gram. Carbohydrates and proteins each contain about four calories per gram.

Fats contain certain fat-soluble vitamins that cannot be carried in water. Your body would not be able to use these vitamins without the help of fats. A lack of fats can slow growth and cause unhealthy skin. Too many fats cause extra pounds to be stored on the body and the blood cholesterol level to rise.

There are several kinds of fats. The terms saturated and unsaturated fats refer to the chemical structure of the different types of fat.

### Saturated Fats

All fats are composed of a carbon chain. The carbon chain of saturated fats is full of (or saturated with) hydrogen atoms. These tend to be solid at room temperature. They include butter, hard cheese, margarine, lard and most animal fats. Two exceptions to this rule are palm oils and coconut oils. They are used very often in processed foods because they are so inexpensive.

Cholesterol is another kind of fat. Its chemical formula is very different from the saturated or unsaturated kinds. Cholesterol is a substance found normally in all body cells. It is needed by the body for many reasons. Making bile acids and nerve tissues are two of its functions. Your body can make enough cholesterol to meet its needs without obtaining it from foods. Saturated fats cause the body to produce cholesterol which hardens the arteries. Eggs, organ meats (liver), red meats, butter, milk and some shellfish--all foods of animal origin--are high in cholesterol. Get into the habit of eating small amounts of foods high in cholesterol early in life because often these eating patterns are carried on into adulthood. Cholesterol begins to clog arteries even early in life.

### Unsaturated Fats

Unsaturated fats do not have all of the chemical bonds in the carbon chain full of hydrogen atoms. These fats are generally liquid at room temperature and are of vegetable origin. Some examples are corn oil, soybean oil, cottonseed oil, sesame oil, safflower oil and sunflower oil and some fish. Unsaturated fats may actually reduce the level of cholesterol in the blood.

ANSWER THE QUESTIONS ON FATS ON THE FOLLOWING ACTIVITY PAGE.

Calculate each answer according to the serving size listed on the package.

MEAT, POULTRY, FISH, DRY BEANS, EGGS &amp; NUTS GROUP ----- INDIVIDUALIZED ACTIVITY

NAME \_\_\_\_\_ CLASS \_\_\_\_\_

**FIND THE FATS WORKSHEET**

**DIRECTIONS:** Survey the food items provided and answer the questions. CHO is the chemical formula for carbohydrates. Answers should be based on one serving size.

FOOD	Calories (Kcal)	Serving Size	Fat grams	Calories from fat	Carbohydrate grams	Calories from CHO
1. Snickers						
2. Chili						
3. Chocolate Milk						
4. Doritos						
5. Oreos						
6. Chicken Noodle Soup						
7. Peanut Butter						
8. Ranch Dressing						
9. Eskimo Pie						
10. Ritz Crackers						

11. How many calories are there in a gram of fat?
12. How many calories are there in a gram of carbohydrate?
13. What kind of vitamins does fat carry in the body?
14. Which kind of fat is full of hydrogen atoms?
15. Which kind of fat causes the body to produce cholesterol?
16. Which kind of fat tends to lower the blood cholesterol level?
17. A high intake of cholesterol leads to what kind of disease?
18. Of what origin are foods that are usually high in cholesterol?
19. Which food above contains the most fat grams per serving?
20. Which food above contains the most carbohydrate grams per serving?

## MEAT, POULTRY, FISH, DRY BEANS, EGGS &amp; NUTS GROUP

\*\*\*KEY\*\*\*

## FIND THE FATS WORKSHEET--KEY

FOOD	Calories (Kcal)	Serving Size	Fat grams	Calories from fat	Carbohydrate grams	Calories from CHO
1. Snickers	280	1 bar	13	117	36	144
2. Chili	250	7 1/2 oz.	7	63	29	116
3. Chocolate Milk	170	1 cup	4	36	27	108
4. Doritos	140	1 oz.	7	63	18	72
5. Oreos	50	1	2	18	8	32
6. Chicken Noodle Soup	70	8 oz.	2	18	8	32
7. Peanut Butter	200	2 Tbsp.	15	135	5	20
8. Ranch Dressing	90	1 Tbsp.	9	81	1	4
9. Eskimo Pie	180	1	12	108	16	64
10. Ritz Crackers	70	4	4	36	9	36

11. How many calories are there in a gram of fat? 9
12. How many calories are there in a gram of carbohydrate? 4
13. What kind of vitamins do fat carry in the body? FAT SOLUBLE
14. Which kind of fat is full of hydrogen atoms? SATURATED
15. Which kind of fat causes the body to produce cholesterol? SATURATED
16. Which kind of fat tends to lower the blood cholesterol level?  
UNSATURATED
17. A high intake of cholesterol leads to what kind of disease?  
HEART DISEASE
18. Of what origin are foods that are usually high in cholesterol?  
ANIMAL ORIGIN
19. Which food above contains the most fat grams per serving?  
PEANUT BUTTER
20. Which food above contains the most carbohydrate grams per serving?  
SNICKERS



REVIEW--REVIEW--REVIEW--REVIEW--REVIEW--REVIEW--REVIEW--REVIEW--REVIEW--REVIEW--REVIEW--REVIEW

## PROTEINS REVIEW GAME

**DIRECTIONS:** Divide the class into equal teams (use small numbers). Each team chooses a captain and is given 500 points at the start of the game. The captain is the only one who may talk to the teacher. He/she bids for and answers the questions. Let the students have one day to work on the review questions ahead of time. They may use their completed sheets to help them with the game.

Have a scorekeeper record bids and scores. Cut up the questions and answers and lay them face down in front of you. The teams bid on the question. They have 500 points with which to start. The high bidder tries to answer the question the teacher turns over. If the captain of the team gives the correct answer, the team gets the bid amount added onto their score. If they incorrectly answer the question, they lose the amount of points they bid. The captain and teammates discuss the possible bid and the answer, but only the captain may give the answer. The team has only 30 seconds to answer or they lose the bid points. The winner receives lab points or some other small prize.

1. Foods from what sources contain complete proteins?
2. Name 3 foods besides meats that are included in the proteins group.
3. What is the top grade of meat?
4. What are the eight building blocks of protein called?
5. What is the white substance found in meats that leads to heart disease?
6. Give three examples of saturated fats.
7. What kinds of fats are usually liquid at room temperature?
8. What temperature should always be used for cooking protein foods?
9. What are the two moist heat cooking methods?
10. What are the three dry heat cooking methods?
11. Should tender or non tender meats be cooked in moist heat?
12. Should tender or non tender meats be cooked in dry heat?
13. What are the two methods of frying in fat?
14. What is the general name of beef less than 3 to 14 weeks old?
15. What is the correct name of meat from a hog?

16. What part of the hog does ham come from?
17. Name three kinds of meat referred to as variety meats.
18. What part of the egg contains most of the nutrients?
19. What part of the egg is high in cholesterol?
20. What is the nutrient in eggs that forms hemoglobin in the blood?
21. Name the four functions of eggs in cooking.
22. Which is the freshest grade of eggs?
23. What does a leavening agent do?
24. What does an emulsifying agent do?
25. Eggs simmered in the shell should be called what?
26. How should eggs be stored in the refrigerator?
27. What part of the egg is removed in egg substitutes?
28. Name two kinds of poultry.
29. What are the two general types of seafood?
30. What nutrient is found in seafood and regulates the thyroid gland?
31. Should fish be cooked by dry heat or moist heat methods?
32. What do mollusks have on them?
33. What is the general name for peas, beans and lentils?
34. What part of the plant do peas, beans and lentils come from?
35. What kind of protein is found in peas, beans and lentils? (except soybeans)
36. What is the term for nuts that become spoiled?
37. What should you do to beans before cooking them?
- 38-40. What are the three cuts in meat that are tender?

REVIEW--REVIEW--REVIEW--REVIEW--REVIEW--REVIEW--REVIEW--REVIEW--REVIEW--REVIEW--REVIEW--REVIEW

### PROTEINS REVIEW--KEY

1. Foods from what sources contain complete proteins?  
ANIMAL SOURCES
2. Name 3 foods besides meats that are included in the proteins group.  
EGGS, NUTS, BEANS, LENTILS, PEAS
3. What is the top grade of meat?  
PRIME
4. What are the eight building blocks of protein called?  
AMINO ACIDS
5. What is the white substance found in meats that leads to heart disease?  
CHOLESTEROL
6. Give three examples of saturated fats.  
BUTTER, LARD, EGG YOLKS, HARD CHEESE, MARGARINE, ANIMAL FATS
7. What kinds of fats are usually liquid at room temperature?  
UNSATURATED FATS
8. What temperature should always be used for cooking protein foods?  
LOW
9. What are the two moist heat cooking methods?  
BRAISING AND STEWING
10. What are the three dry heat cooking methods?  
BROILING, PAN-BROILING AND ROASTING
11. Should tender or non tender meats be cooked in moist heat?  
NON-TENDER
12. Should tender or non tender meats be cooked in dry heat?  
TENDER
13. What are the two methods of frying in fat?  
PAN FRYING AND DEEP FAT FRYING
14. What is the general name of beef less than 3 to 14 weeks old?  
VEAL
15. What is the correct name of meat from a hog?  
PORK

REVIEW--REVIEW--REVIEW--REVIEW--REVIEW

\*\*\*PROTEINS, KEY\*\*\*

16. What part of the hog does ham come from?  
HIND LEG
17. Name three kinds of meat referred to as variety meats.  
BRAINS, LIVER, KIDNEY, HEART, TONGUE, SWEETBREADS, TRIPE,  
LIVER
18. What part of the egg contains most of the nutrients?  
YOLK
19. What part of the egg is high in cholesterol?  
YOLK
20. What is the nutrient in eggs that forms hemoglobin in the blood?  
IRON
21. Name the four functions of eggs in cooking.  
NUTRIENTS, THICKENING, LEAVENING, EMULSIFYING AGENTS
22. Which is the freshest grade of eggs?  
GRADE AA
23. What does a leavening agent do?  
MAKES FOOD RISE
24. What does an emulsifying agent do?  
HOLDS MIXTURES TOGETHER
25. Eggs simmered in the shell should be called what?  
HARD COOKED OR SOFT COOKED, NOT HARD OR SOFT BOILED
26. How should eggs be stored in the refrigerator?  
IN THEIR ORIGINAL CONTAINER
27. What part of the egg is removed in egg substitutes?  
YOLK
28. Name two kinds of poultry.  
CHICKEN, TURKEY, DUCK, GEESE, GUINEA, CORNISH HENS, SQUAB,  
PIGEONS
29. What are the two general types of seafood?  
FINFISH AND SHELLFISH
30. What nutrient is found in seafood and regulates the thyroid gland?  
IODINE

REVIEW--REVIEW--REVIEW--REVIEW--REVIEW

\*\*\*PROTEINS, KEY\*\*\*

31. Should fish be cooked by dry heat or moist heat methods?  
FISH ARE TENDER AND MAY BE COOKED BY EITHER METHOD
32. What do mollusks have on them?  
A SHELL
33. What is the general name for peas, beans and lentils?  
LEGUMES
34. What part of the plant do peas, beans and lentils come from?  
THE SEED
35. What kind of protein is found in peas, beans and lentils? (EXCEPT  
SOYBEANS)  
INCOMPLETE
36. What is the term for nuts that become spoiled?  
RANCID
37. What should you do to beans before cooking them?  
SOAK THEM
- 38-40. What are the three cuts in meat that are tender?  
RIB BONE, T-BONE, HIP BONE

TEST - TEST - TEST - TEST - TEST - TEST - TEST - TEST - TEST - TEST - TEST - TEST - TEST - TEST - TEST - TEST

NAME \_\_\_\_\_ CLASS \_\_\_\_\_

## PROTEINS TEST

### MULTIPLE CHOICE

WRITE THE ANSWERS ON YOUR OWN PAPER

1. What temperature should always be used for cooking protein foods?  
A. High                      B. Medium                      C. Low
2. What types of meats should be cooked by dry heat methods?  
A. Tender                      B. Non-tender                      C. Tough
3. Which kind of fat is unsaturated?  
A. Egg yolks                      B. Butter                      C. Vegetable oils
4. What kind of foods are incomplete proteins?  
A. Animal sources                      B. Plants                      C. Soybeans
5. What is the top grade of meat?  
A. Prime                      B. Choice                      C. Superior
6. Which food is not included in the Proteins Group?  
A. Peanut butter                      B. Eggs                      C. Milk
7. Which method is a moist-heat cooking method?  
A. Broiling                      B. Frying                      C. Braising
8. Which method is a dry-heat cooking method?  
A. Roasting                      B. Stewing                      C. Simmering
9. What is the term for beef aged 3 to 14 weeks old?  
A. Venison                      B. Guinea                      C. Veal
10. What meat cut comes from the hind leg of a hog?  
A. Bacon                      B. Ham                      C. Chops
11. What part of the egg contains most of the nutrients?  
A. White                      B. Albumen                      C. Yolk
12. Which mineral is found in eggs?  
A. Calcium                      B. Protein                      C. Iron
13. What part of the egg functions as a thickening agent?  
A. White                      B. Albumen                      C. Yolk

TEST - TEST - TEST - TEST - TEST - TEST

PROTEINS TEST, continued

14. What does a leavening agent do?  
 A. Prevents foods from separating  
 B. Makes food rise  
 C. Makes foods thick
15. What does an emulsifying agent do?  
 A. Prevents foods from separating  
 B. Makes food rise  
 C. Makes foods thick
16. Which of the following is a kind of poultry?  
 A. Duck                                      B. Mollusk                                      C. Venison
- \_\_\_ 17. LEGUMES                                      A. Round, flank, pot roast
- \_\_\_ 18. LIQUID AT ROOM TEMPERATURE                                      B. Saturated
- \_\_\_ 19. FINFISH                                      C. Sirloin, rib, T-bone
- \_\_\_ 20. SHELLFISH                                      D. Amino acids
- \_\_\_ 21. TENDER CUTS OF MEAT                                      E. Dried peas and beans
- \_\_\_ 22. NON TENDER CUTS OF MEAT                                      F. Unsaturated
- \_\_\_ 23. BUILDING BLOCKS OF PROTEIN                                      G. Have scales and fins
- \_\_\_ 24. SOLID AT ROOM TEMPERATURE                                      H. Have a shell

TRUE OR FALSE WRITE OUT THE WHOLE WORD.

- \_\_\_\_\_ 25. A pot roast should usually be broiled for best eating.
- \_\_\_\_\_ 26. A leavening agent is used to hold the ingredients together in mayonnaise.
- \_\_\_\_\_ 27. The iodine in seafood helps keep blood cholesterol low.
- \_\_\_\_\_ 28. Legumes are all high-quality complete proteins.
- \_\_\_\_\_ 29. Always cook protein foods with low heat.
- \_\_\_\_\_ 30. Extended cooking can toughen protein foods.
- \_\_\_\_\_ 31. The freshest grade of eggs is Grade A.
- \_\_\_\_\_ 32. The nutrient in eggs that prevents anemia is protein.
- \_\_\_\_\_ 33. A T-bone steak should usually be braised for best eating.
- \_\_\_\_\_ 34. Soaking beans before cooking them helps them cook faster.
- \_\_\_\_\_ 35. Legumes come from the seed of the plant.

**\*\*BONUS QUESTION: WHAT KIND OF POULTRY LAYS THE LARGEST EGG?  
 (It is not native to this country!)**

TEST - TEST - TEST - TEST - TEST - TEST - TEST - TEST - TEST

\*\*\*KEY\*\*\*

## PROTEINS TEST--KEY

MULTIPLE CHOICE

WRITE THE ANSWERS ON YOUR OWN PAPER

1. What temperature should always be used for cooking protein foods?  
A. High                      B. Medium                      C. Low
2. What types of meats should be cooked by dry heat methods?  
A. Tender                      B. Non-tender                      C. Tough
3. Which kind of fat is unsaturated?  
A. Egg yolks                      B. Butter                      C. Vegetable oils
4. What kind of foods are incomplete proteins?  
A. Animal sources                      B. Plants                      C. Soybeans
5. What is the top grade of meat?  
A. Prime                      B. Choice                      C. Superior
6. Which food is not included in the Proteins Group?  
A. Peanut butter                      B. Eggs                      C. Milk
7. Which method is a moist-heat cooking method?  
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8. Which method is a dry-heat cooking method?  
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TEST - TEST - TEST - TEST - TEST - TEST - TEST - TEST - TEST

\*\*\*KEY--PROTEINS TEST\*\*\*

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TRUE OR FALSE WRITE OUT THE WHOLE WORD.

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- FALSE 28. Legumes are all high-quality complete proteins.
- TRUE 29. Always cook protein foods with low heat.
- TRUE 30. Extended cooking can toughen protein foods.
- FALSE 31. The freshest grade of eggs is Grade A.
- FALSE 32. The nutrient in eggs that prevents anemia is protein.
- FALSE 33. A T-bone steak should usually be braised for best eating.
- TRUE 34. Soaking beans before cooking them helps them cook faster.
- TRUE 35. Legumes come from the seed of the plant.

**\*\*BONUS QUESTION:** What kind of poultry lays the largest egg?  
**THE OSTRICH**

EGG MCSMITH

- 1 muffin per person
- 1 American cheese slice per person
- 1 egg per person
- 1 ham slice per person

- \_\_\_\_\_ 1. Use a tray to get the supplies.
- \_\_\_\_\_ 2. Fill the sink with hot, soapy water.
- \_\_\_\_\_ 3. Get two clean dish cloths and towels.
- \_\_\_\_\_ 4. Place the ham slices on a plate. Microwave them for about 30 seconds until piping hot.
- \_\_\_\_\_ 5. Slice the muffins in half. Place a ham slice on each muffin.
- \_\_\_\_\_ 6. Put two cups of water in a frying pan. Bring the water to simmering. (below boiling)
- \_\_\_\_\_ 7. Break each egg into a small bowl and then slip it into the simmering water.
- \_\_\_\_\_ 8. Salt and pepper the eggs. When they are set, remove them from the pan with a pancake turner.
- \_\_\_\_\_ 9. Place an egg on top of each ham slice.
- \_\_\_\_\_ 10. Top each egg with a slice of cheese.
- \_\_\_\_\_ 11. Place the Egg McSmith back in the microwave until the cheese is bubbly.
- \_\_\_\_\_ 12. Set the table.
- \_\_\_\_\_ 13. Clear off the table. Wipe off the table and counters.
- \_\_\_\_\_ 14. Wash the dishes. Wipe out the sink.
- \_\_\_\_\_ 15. Dry the dishes. Put the used cloths in the washer.
- \_\_\_\_\_ 16. Put away the dry dishes.
- \_\_\_\_\_ 17. Wipe out the microwave--inside and outside.
- \_\_\_\_\_ 18. Sweep the floor.
- \_\_\_\_\_ 19. Vacuum the carpet.
- \_\_\_\_\_ 20. TEACHER CHECK OFF FOR CREDIT.

UNIT MEMBERS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_











MEAT, POULTRY, FISH, DRY BEANS, EGGS & NUTS GROUP LAB RECIPES, continued

## TACO SALAD

### SALAD

1/4 pound hamburger  
 1/8 cup kidney beans  
 2 tsp. taco seasoning mix  
 1 wedge lettuce  
 1 green onion  
 1/4 tomato  
 1 wedge cheese

### DRESSING

1/4 cup salad dressing  
 1 tsp. pickle relish  
 1 Tbsp. chili sauce  
 12 tortilla chips

**SALAD**--Brown the hamburger in a frying pan over medium heat. Drain off the fat. Stir in the beans and taco seasoning mix. Wash and dry the lettuce, onion and tomato. Chop the lettuce and onion. Cut the tomato into wedges. Grate the cheese. Toss the lettuce, cheese, onion, tomato and hamburger together. Garnish with tortilla chips.

**SALAD DRESSING**--Combine the salad dressing, pickle relish, chili sauce.

## TUNA BURGERS

1/2 can tuna, drained  
 1/3 stalk celery, chopped  
 1/8 cup mayonnaise or salad dressing  
 1/4 cup shredded mild cheddar cheese  
 6 sliced olives

2 tsp. minced onion  
 1/4 tsp. salt  
 1/8 tsp. pepper  
 hamburger buns  
 1 piece aluminum foil

Preheat the oven to 350 degrees.

Mix the tuna, celery, cheese, onion, olives, salt, pepper and mayonnaise together. Spread buns with margarine. Fill the buns with the tuna mixture. Place each sandwich on a piece of aluminum foil and fold the edges securely. Place on an ungreased cookie sheet. Bake in a 350 degree oven for 10 min.



Name \_\_\_\_\_

Class \_\_\_\_\_

**SHOPPING FOR PROTEINS**

**DIRECTIONS:** Survey the products provided by your teacher. Complete the information below. Your teacher will correct this worksheet.

**1. PEANUT BUTTER**

VARIETY	BRAND	PRICE	PRICE/OZ.	MAIN INGREDIENT
Name brand				
Name brand				
Local variety				

**2. TUNA FISH**

VARIETY	BRAND	PRICE	PRICE/OZ.	MAIN INGREDIENT
Name brand				
Name brand				
Local variety				

13. Which peanut butters contain added salt or sugar?
14. Which peanut butter is the best buy per ounce?
15. Which peanut butter is the least economical per ounce?
16. Which peanut butter provides the most protein per ounce?
17. Which tuna contains added salt?
18. Which tuna is the best buy per ounce?
19. Which tuna is the least economical per ounce?
20. Which tuna gives you the most protein per ounce?

MEAT, POULTRY, FISH, DRY BEANS, EGGS & NUTS GROUP    \*\*\*SHOPPING FOR PROTEINS--KEY\*\*\*

### SHOPPING FOR PROTEINS--KEY

TWO POINTS FOR EACH LINE IN THE SURVEY. TWENTY POINTS POSSIBLE.

The teacher will have to compute the information for this key, depending upon the brands used.

Name \_\_\_\_\_

Class \_\_\_\_\_

**CREAM PUFFS**

Prepare the following cream puff and filling recipe at home. Have your parent or guardian sign the form below and return it for credit.

1/2 cup water

2 eggs

1/4 cup margarine

1/2 cup flour

Heat the oven to 400 degrees. Bring the water and margarine to a rolling boil. Stir in the flour all at once. Reduce the heat to low. Stir vigorously about one minute or until the mixture leaves the sides of the pan and forms a ball. Remove the pan from the heat. Stir in the eggs one at a time, beating each time until smooth. When the mixture is very smooth and glossy, drop the dough onto an ungreased cookie sheet. It makes five large cream puffs. Bake 20-25 minutes until they are a very light brown. Do not open the oven door.

Turn the heat off and leave them in the oven for two hours so they will dry out. If you remove them from the oven sooner than this, they will fall.

**VANILLA CUSTARD FILLING**

1/2 cup sugar

2 egg yolks, slightly beaten

3 Tbsp. cornstarch

2 Tbsp. margarine

1/4 salt

2 tsp. vanilla

2 cups milk

Blend the sugar, cornstarch and salt in a heavy bottomed pan or double boiler. Combine the milk and egg yolk; gradually stir this into the sugar mixture. Cook over medium heat, stirring constantly, until the mixture thickens and boils. Boil and stir for one minute. Remove from heat; stir in the margarine and vanilla. Refrigerate.

When cream puffs have dried out, slice the tops off. Fill with custard filling. Top with chocolate frosting or whipped cream.

HOW DID YOUR CREAM PUFFS TURN OUT?

PARENT'S SIGNATURE \_\_\_\_\_

COMMENTS