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**ASSIGNMENT SHEET**  
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**MILK, YOGURT, & CHEESE 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. MILK ON PARADE (20)                     |
| _____ | _____ | 2. DAIRY CROSSWORD (20)                    |
| _____ | _____ | 3. COOKING WITH MILK (20)                  |
| _____ | _____ | 4. DAIRY DISCOVERY (30)                    |
| _____ | _____ | 5. CALCIUM TO THE RESCUE (20)              |
| _____ | _____ | 6. DAIRY BINGO REVIEW (20)                 |
| _____ | _____ | 7. DAIRY FILMSTRIP                         |
| _____ | _____ | 8. CHEESE FILMSTRIP (20)                   |
| _____ | _____ | 9. A GUIDE TO CHEESE (20)                  |
| _____ | _____ | 10. SHOPPING FOR DAIRY PRODUCTS            |
| _____ | _____ | 11. SUPERMARKET SWEEP (20)                 |
| _____ | _____ | 12. COMPUTER PROGRAM (20)                  |
| _____ | _____ | 13. MANAGEMENT OF CLASS TIME AND ROOM (20) |
| _____ | _____ | 14. SUMMARY SHEET (3 points per day)       |
| _____ | _____ | 15. CHALLENGE PROJECT(S) (30 EACH)         |
| _____ | _____ | LEARNING ABOUT LOUIS PASTEUR               |
| _____ | _____ | HOMEMADE YOGURT                            |
| _____ | _____ | THREE FACES OF DAIRY PRODUCTS              |
| _____ | _____ | TOTAL                                      |
| _____ | _____ | GRADE                                      |

SUMMARY SHEET

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

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.

**MILK, YOGURT, & CHEESE GROUP TRIVIA QUESTIONS**

1. **WHAT KIND OF ANIMAL'S MILK IS MOST COMMONLY DRUNK IN LAPLAND?**  
Reindeer's milk
2. **LITTLE MISS MUFFET SAT ON A TUFFET EATING HER CURDS AND WHEY. WHAT ARE CURDS AND WHEY?**  
Cottage cheese
3. **WHAT DRINK ORIGINATED AS A BY-PRODUCT (WHAT IS LEFT OVER) WHEN MAKING BUTTER?**  
Buttermilk
4. **WHAT COUNTRY (AT THE TIME IT WAS RULED BY THE PHARAOHS) FIRST MADE POWDERED MILK BY DRYING IT IN THE SUN?**  
Egypt
5. **IN THE NURSERY RHYME ABOUT THE CROOKED MAN WHO HAD A CROOKED CAT WHICH CAUGHT A CROOKED MOUSE. THEY PROBABLY ALL HAD RICKETS. THIS IS A DISEASE CAUSED BY THE LACK OF WHICH NUTRIENT?**  
Vitamin D
6. **WHAT DOES THE TERM AU GRATIN ON A MENU MEAN?**  
The dish is served with cheese
7. **WHAT CAN YOU DO TO CHEESE TO MAKE IT MELT EASIER WHEN COOKING?**  
Grate it first
8. **HOW CAN YOU PRODUCE MORE VOLUME WHEN WHIPPING CREAM?**  
Keep the whipping cream very cold and chill the bowl and beaters
9. **WELSH RAREBIT IS A FAMOUS DISH. YOU OFTEN HAVE PART OF IT FOR BREAKFAST. JUST WHAT IS THE DISH WELSH RAREBIT?**  
Melted cheese sauce over toast
10. **WHAT IS A FROZEN PRODUCT MADE OF PASTEURIZED SUGAR, MILK SOLID STABILIZERS, FOOD ACID, FRUIT OR FRUIT JUICES AND WATER?**  
Sherbet
11. **WHAT PERCENTAGE OF MILK IS WATER?**  
86%
12. **ALONG WITH CALCIUM, PHOSPHORUS AND VITAMIN D, YOUR BODY NEEDS WHAT ELSE TO MAKE STRONG BONES?**  
Exercise

## MILK, YOGURT, &amp; CHEESE GROUP-----DAIRY TRIVIA, continued

13. **WHY IS VITAMIN D CALLED THE SUNSHINE VITAMIN?**  
Your body can form Vitamin D when the sun shines on your skin.
14. **WHAT INGREDIENT MAKES A CUSTARD (LIKE PUDDING IN ECLAIRS) GET THICK?**  
Eggs. As the custard is cooked, the egg coagulates forming a protein network which can entrap liquids and cause them to become a smooth, thickened sauce.
15. **WHAT NUTRIENT IS SOMETIMES STOLEN FROM THE BONES FOR OTHER BODY USES AND RESULTS IN ENLARGED JOINTS AND CRAMPS IN THE LEGS?**  
Calcium
16. **LACTOSE IS A NUTRIENT FOUND IN MILK. WHAT IS IT?**  
Milk Sugar--A carbohydrate (Lact = Milk Ose = Sugar)
17. **WHAT KIND OF CHEESE IS IN THE DISH QUICHE LORRAINE?**  
Swiss cheese (Also has eggs and milk served in a pastry shell)
18. **THIS DAIRY PRODUCT IS SOMETIMES MADE FROM REINDEER OR BUFFALO'S MILK? WHAT IS IT?**  
Cheese
19. **ORIGINALLY, ESKIMOS DIDN'T DRINK MILK, YET THEY HAD STRONG BONES AND TEETH. HOW DID THEY GET THEIR CALCIUM?**  
When eating meat, they ate the entire animal--boiling the bones, tails and fins until they were soft enough to eat.
20. **WHAT CAUSES THE HOLES IN SWISS CHEESE?**  
Bubbles of carbon dioxide are inserted with a shot needle
21. **WHAT IS THE MOST COMMON KIND OF CHEESE SOLD IN THE U.S.?**  
Cheddar
22. **WHAT KIND OF ANIMAL'S MILK IS MOST COMMONLY DRUNK IN INDIA?**  
Buffalo's milk
23. **What is the most popular ice cream flavor in North America?**  
VANILLA
24. **What is the most popular beverage in America?**  
MILK
25. **What color is yak's milk?**  
PINK
26. **How can a two-page composition on milk be only one-half page long?**  
WHEN IT IS ABOUT CONDENSED MILK
27. **What is the most popular dessert in America?**  
ICE CREAM

## MILK ON PARADE

**DIRECTIONS:** Put each of the names of the following dairy products on a separate card. Give one to each student. Have each student look up his/her dairy product to determine in which category it fits. He/she should write a short definition for that particular dairy product.

Display milk product forms as you have each student share the information she/he found with the class. Have students complete "Milk on Parade" as you review the information.

Milk is available in many forms: canned, dried and frozen. The cartons have labels which usually provide much information for you to read. The pull dates on the carton inform the consumer about freshness. Products should be used within one week of the pull date to insure getting the best quality. It is not a law in Utah, however, that products be pulled from the shelves when the pull date is up--so Buyer Beware.

### FRESH, SWEET MILK

**RAW:** Raw milk is untreated milk fresh from the cow. It is seldom available in stores since it may contain harmful bacteria.

**PASTEURIZED:** Pasteurized milk has been heated to kill any harmful bacteria that might be present. This can be accomplished by heating milk to 161 degrees F. for 15 seconds or heating it to 134 degrees F. for at least 30 minutes. It is then cooled immediately and refrigerated. Our government sets health standards to keep milk safe. Cows are tested frequently. Before pasteurization was practiced, milk carried bacteria that caused typhoid fever, undulant fever, septic sore throat and dysentery. Keep milk refrigerated to keep it safe to drink. Always cover milk tightly because it absorbs flavors and odors from other foods that may be around it.

**HOMOGENIZED:** Pasteurized milk that has been forced through very small openings in a screen-like machine has been homogenized. This process reduces the size of the fat globules (cream) so they are evenly distributed throughout the milk instead of rising to the surface. A film of absorbed protein immediately surrounds each of the new globules and prevents them from reuniting. No cream line forms and the increased dispersion of fat imparts richer flavor and more body to the milk. The fat carries most of the flavor in milk. Milk is about 88% water.

**FORTIFIED:** Fortified milk means the milk has had Vitamin A and D added for extra nutrition.

**WHOLE:** Whole milk has about 3.5 % cream. (1 cup = 150 calories)

MILK, YOGURT, & CHEESE GROUP-----MILK ON PARADE, continued

**CHOCOLATE MILK:** Chocolate milk is whole milk to which chocolate flavor has been added. (1 cup = 210 calories)

**CHOCOLATE DRINK:** Skim milk to which chocolate flavor has been added is called chocolate drink. (1 cup = 160 calories)

**LOW FAT:** Low-fat milk has had some of the fat removed. It contains between .5 and 2.0 % milk fat. It is usually fortified with Vitamin A and Vitamin D. The label indicates the percentage of fat present. The amount of fat in milk determines how many calories it contains. (1 cup 2% = 120 calories, 1 cup 1% = calories)

**SKIM MILK:** Milk which has had the fat removed is called skim milk. It has about 85 calories per cup instead of 150 calories, which are found in whole milk. Most of the Vitamin A and D are also removed because they are fat-soluble vitamins, but they are usually added back in (fortified). (1 cup = 85 calories)

### CONCENTRATED MILK

Concentrated milks have had some or all of the water removed.

**EVAPORATED MILK:** Canned milk from which about 60% of the water has been removed is evaporated. It is sealed and heat-treated so it will not spoil. It can be reconstituted with equal parts of water and used as whole milk.  
1 cup skim = 200 calories

**SWEETENED CONDENSED MILK:** Canned milk made from evaporated whole milk which has had 60% of the water removed and about 45% sugar added is sweetened condensed milk. This product is used mainly for making desserts.  
1 cup = 980 calories

**NONFAT DRY MILK:** Skim milk from which all the water has been removed is nonfat dry milk. Dry whole milk does not keep well because of the fat content which makes it turn rancid. Nonfat dry milk will keep for a long time and is very economical.  
(1 cup = 80 calories)

MILK, YOGURT, & CHEESE GROUP-----MILK ON PARADE, continued

**CULTURED MILK:**

Cultured milks have a sour flavor due to the breakdown of lactose (milk sugar) to lactic acid by bacterial action.

**SOUR MILK:** Sour milk is soured by lactic-acid bacteria.

**BUTTERMILK:** Originally, buttermilk was the liquid left after making butter from cream. Most buttermilk today is cultured from skim milk which has been treated with lactic-acid bacteria. It is mild in flavor. (1 cup = 100 calories)

**YOGURT:** Yogurt is a coagulated milk product with a custard-like consistency. It is fermented skim milk. It is more expensive than milk and can be frozen and have fruit added. (1 cup fruit flavored = 260 calories)

**CREAM**

Cream is the fat of milk. Creams are categorized according to their fat content.

**WHIPPING CREAM:** Whipping cream is heavy cream which contains about 36% fat. (1 cup = 840 calories)

**HALF-AND-HALF:** Half-and-half is a blend of milk and cream with about 10% fat. (1 cup = 324 calories)

**SOUR CREAM:** Sour cream contains 18% fat. adding a lactic-acid bacteria. It has been soured and thickened by a lactic-acid bacteria. (1 cup = 485 calories)

**BUTTER:** Butter is the fat of cream which is separated by churning. It is an excellent source of vitamin A since this vitamin is fat-soluble and is rich in energy (calories). (Butter = 100 calories per Tbsp., Margarine = 100 calories per Tbsp.)

**ICE CREAM:** Ice cream is made with cream, milk, sugar and may contain many added ingredients. Air is whipped into the mixture and it is then frozen to a smooth texture. French ice cream contains eggs. (Hard serve ice cream = 270 calories per cup, Soft serve ice cream = 375 calories per cup)

**ICE MILK:** Ice milk contains less fat than ice cream and has fewer calories. (Hard Ice Milk = 200 calories per cup Soft Ice Milk = 225 calories per cup)

MILK, YOGURT, & CHEESE GROUP-----MILK ON PARADE, continued

**CHEESES:**

**HARD CHEESES:** These are made from partially skimmed cow's milk and ripened or aged to a hard consistency.

**SEMISOFT CHEESES:** These cheeses are ripened to a semisoft consistency.

**SOFT CHEESES:** Made from skim or whole milk. These cheeses are not ripened and have a soft consistency.

**PROCESS CHEESES:** Produced from a blend of cheeses to develop different textures and flavors.

**SUMMARY QUESTIONS**

1. What are the four main categories of cheeses?  
HARD, SEMISOFT, SOFT, PROCESSED
2. What is the process that heat treats milk to destroy bacteria?  
PASTEURIZATION
3. What is the process that breaks up fat globules so the cream will no longer rise to the top?  
HOMOGENIZATION



## HOMEMADE ICE CREAM

**DIRECTIONS:** Make homemade ice cream for the class and discuss the scientific principles involved.

Ice cream! For many people, young and old, those words bring back fond memories of good times and good food.

Ice cream is much better if made in a freezer that incorporates air into the product as it is being made. Putting it into a freezer to harden results in a coarsely textured product. There are two types of ice cream freezers--electric and hand operated.

Freezers have four main parts: (1) a metal can and cover, (2) a dasher to agitate the mix as it freezes and incorporates air (the can revolves around the dasher--the dasher does not move), (3) a bucket to hold the ice, salt and brine; (4) a drive mechanism, either hand crank or electric motor to turn the can and dasher as the mixture freezes.

Make the ice cream mixture and chill thoroughly. Fill the container about  $\frac{2}{3}$  full. You need to leave room for expansion. Ice cream can be made from a custard which has been cooked on top of the range first or simply done by mixing ingredients together well.

Measure the salt to be used. A freezing mix of  $\frac{1}{4}$  cup rock salt for each quart of crushed ice is suggested. Salt is used because it melts the ice. (The point at which a solid turns into a liquid or a liquid turns into a solid is the time at which it is the very coldest.) This helps freeze the ice cream more quickly.

Place the covered container and dasher in the freezer bucket. Fit the crank or motor into position and secure it. Layer ice and salt around the bucket. Begin with about two inches of ice; then evenly distribute about  $\frac{1}{4}$  cup rock salt. Crank the freezer slowly for the first three to five minutes. Once it begins to freeze, crank it rapidly for a few more minutes, then slowly again until it is very difficult to turn.

Once the dessert is frozen it should be allowed to stand for at least 15 minutes to attain a desirable consistency for freezing. This is called ripening. Then eat and enjoy!

The following two recipes are easy and delicious!

This is an easy vanilla ice cream recipe. You can add additional flavorings such as cookies, peppermint or crushed candy bars for an added treat.

MILK, YOGURT, & CHEESE GROUP-----HOMEMADE ICE CREAM, continued

### **VANILLA ICE CREAM**

1-1/2 qt. heavy cream  
 3 cups sugar  
 1 can evaporated milk  
 1 Tbsp. pure vanilla  
 1/2 tsp. salt  
 About 2 quarts whole milk

Mix all ingredients except milk together well in electric mixer. Fill the ice cream container with this mixture. Add enough whole milk to bring the mixture to within four inches of top of the container.

Makes about 4 quarts

### **FROZEN STRAWBERRY YOGURT**

32 oz. plain or vanilla yogurt  
 3/4 cup sugar  
 3 oz. flavored Jell-O  
 10 oz. package frozen strawberries  
 1/2 tsp. salt  
 1 cup Half-and-Half  
 2 tsp. vanilla

Drain strawberries. Place drained liquid in a saucepan and heat to boiling. Add Jell-O and stir until dissolved. Mix strawberries, yogurt and gelatin mixture in a blender until smooth. Add these and remaining ingredients to an ice cream freezer. Freeze mixture until firm.

Makes about 3 quarts.

### **SUMMARY QUESTIONS:**

1. When making ice cream, when is the ice mixture the coldest?  
 THE POINT AT WHICH THE MIXTURE TURNS FROM A SOLID TO A LIQUID.
2. Why is salt added to the ice when making ice cream?  
 IT MELTS THE ICE, WHICH MAKES THE TEMPERATURE COLDER
3. The dasher agitates the mixture and adds what to the mixture?  
 AIR

## FROM CREAM TO BUTTER

**DIRECTIONS:** Ask if anyone has ever seen a butter churn or made butter with one. Have students make butter from cream. Place one pint of heavy whipping cream in several small glass jars with tightly fitting lids. Remove whipping cream from the refrigerator about 1/2 hour before starting. Have students each take a turn shaking the jar and seeing how long it takes until the butter is formed. Spread the butter on crackers and taste it. Discuss with the students how modern food technology has improved our way of life. How would students like to make everything from scratch?

MILK, YOGURT, & CHEESE GROUP-----MOTIVATOR

## MEALS WITH MILK

**DIRECTIONS:** Divide the students into five groups. Many different foods are made with milk or milk products. Have each group give three examples of food made with milk and three made with cheese for the category assigned to them. Do not use plain milk or cheese. You may wish to check a cookbook for ideas.

Some people do not care for the taste of milk or are not able to tolerate it. Think of some ways these people could include milk in their diets without drinking it plain.

## COOKING WITH MILK

THE OBJECTIVES OF MILK COOKERY ARE TO PREVENT:

1. SCUM FORMATION
2. BOILING OVER
3. SCORCHING
4. CURDLING

### SCUM FORMATION

Demonstrate the following experiment dealing with the formation and prevention of scum while cooking with milk.

Heat two saucepans each filled with 1/2 cup milk.

1. Heat the first saucepan on low heat. When the milk is warm, beat with a rotary beater to form a foam. Heat carefully to a simmer. Check to see if scum forms. As foam disappears, beat again.
2. Heat the second saucepan on high heat. Bring the milk to the simmer point. Watch to see if a scum forms. Remove the scum and wait to see if another one forms. Check the appearance of the bottom of the pan.

### SCIENTIFIC PRINCIPLES INVOLVED:

Milk contains vitamins, minerals and protein. Heat coagulates and makes protein become firm. The scum that forms on top of the milk and the substance you see sticking to the sides of the second pan are protein particles that have changed due to heat. Milk scorches very easily when exposed to high heat. A thin film forms when using low heat; a thick film forms when using high heat. As soon as the scum is removed, it will form unless measures are taken to prevent this.

Whipping the first pan with the beater produced a foam that prevented scum from forming. This foam of bubbles lasted only a few minutes.

### FORMATION OF A SCUM CAN BE PREVENTED BY:

1. Using a covered container
2. Stirring the milk during heating
3. Beating the milk to form a foam

VALUABLE PROTEIN IS LOST IF A SCUM IS FORMED AND THEN THROWN AWAY.

### BOILING OVER

When a film forms on boiled milk, pressure builds under the scum which forces the milk to break through the scum and boil over. When this film is prevented from forming, it will eliminate the milk boiling over.

## SCORCHING OF MILK

The protein that coagulated on the sides and bottom of the second pan occurred because a high heat was used. Sometimes a brown film develops. This film contains the milk sugar, lactose, along with the protein. A low heat must be used to prevent scorching. Stirring or beating the mixture will not prevent this film from developing.

When heated, some of the protein in the milk settles on the sides and bottom of the pan. This will turn brown (scorch) unless a very low heat is used. Heating milk in a double boiler will help eliminate this problem, but it takes much longer to cook.

## CURDLING OF MILK

**SCIENTIFIC PRINCIPLES INVOLVED:** When acid is added to milk, the protein settles out in white clumps or curds and separates from the liquid. The milk is said to be curdled.

Curdling of milk can be prevented by:

1. Thickening the milk with starch before combining foods.
2. Using a low temperature for cooking the food.
3. Using fresh milk instead of sour milk.

## HOMEMADE YOGURT (Can be a demonstration)

|  |                      |
|--|----------------------|
| Microwave temperature probe or thermometer | 1/3 cup plain yogurt |
| 2-1/2 cups nonfat dry milk powder          | desired fruit        |
| 3-1/2 cups water                           | (makes 4 cups)       |

Place dry milk in 2-quart casserole. Slowly stir in water until dry milk dissolves. Microwave at HIGH for 8-12 minutes or until the temperature reaches 190 degrees, stirring it twice. Let the mixture cool to 115 degrees. Stir a small amount of the hot mixture into the yogurt. Cover with plastic wrap. Return to stirring the milk constantly.

Insert microwave thermometer through plastic so it rests in center of milk mixture. Check the temperature periodically. Reduce microwave power to 30% (Medium Low). When the temperature falls below 110 degrees, microwave it 30 seconds at a time until the temperature reaches 115 degrees again.

Allow the mixture to stand in the oven, undisturbed, 3 to 4 hours, checking the temperature every 30 minutes. Every time the temperature falls below 110 degrees, microwave it until it returns to 115 degrees. The mixture will appear thick (set-up). Transfer the yogurt to the refrigerator to chill it. Add fruit. Store it in the refrigerator no longer than two weeks.

**SUMMARY QUESTIONS:**

1. What cell-building nutrient will scorch when using high heat?  
PROTEIN
2. Why does milk sometimes boil over when cooking?  
PRESSURE BUILDS UP UNDER THE SCUM
3. What is the scientific name for milk sugar?  
LACTOSE

## NUTRIENTS FOUND IN MILK

Milk is often considered nature's most perfect food. This is because it contains nearly all of the nutrients we need to stay healthy. We will talk about three of the main nutrients found in milk that are difficult to get from other sources--**CALCIUM, RIBOFLAVIN AND VITAMIN A.**

**CALCIUM** is the most abundant mineral found in the body. It is found mostly in the bones. Our bones and teeth are living tissue and, as such, are always undergoing change.

A growing teenage boy or girl needs more calcium than an adult, because they are growing so fast. Teens are not getting enough calcium, and yet they need it more than any other age group. The calcium content is low in most foods, except milk.

The Eskimos used to eat the entire animal--including the bones, tails, fins and heads. They boiled these parts to make them soft. This is how they got their calcium. It is much easier for us.

One quart of milk contains about 1200 milligrams of calcium. This is the amount that teenage boys and girls need each day. However, you need the proper balance of phosphorus and vitamin D as well, or some of the calcium may simply pass through your body without doing much good. Milk has exactly the right balance of these nutrients to make calcium easy to absorb. That is one reason milk is a better calcium source than simple calcium supplements. Studies have shown that exercise, along with enough calcium, help to make the strongest bones. Bones need a workout to stay in shape.

Calcium is mainly needed for bones and teeth. It is also needed in the blood stream to help the heart muscle contract, to give firmness to the liquid part of cells and to help the blood to clot.

When you do not get enough calcium in the food you eat, your body steals it from your bones. This may cause the bones to be more fragile, joints to enlarge and legs to cramp.

You cannot get too much calcium through food because the body eliminates what it does not need. If you try to get calcium through pills, you get a blast of calcium all at once, and it is possible to get too much calcium. Pill-form calcium may be hard to absorb for some people. At some point, it can even create calcium kidney stones.

Studies at the University of Nebraska also show that calcium in pills could prevent your body from absorbing manganese--a mineral that plays an important role in preventing bone disease. It is also possible that calcium pills may block iron absorption and cause iron deficiency.



MILK, YOGURT, & CHEESE GROUP-----NUTRIENTS FOUND IN MILK, continued

Soda pop contains a great deal of phosphorus (phosphoric acid). Calcium and phosphorus need to work together in the body. Some nutritionists believe that when a large amount of phosphorus is taken in and not enough calcium, the body steals calcium from the bones to work with it. This could make the bones weak.

Riboflavin is the growth-promoting vitamin. It helps our eyes to function well. Another name for Riboflavin is Vitamin B2.

Red-streaked eyes may develop from having too low a level of riboflavin. This is because the body makes an effort to make up the shortage by building a greater network of blood vessels, bringing more blood to the eyes to supply more riboflavin. Another common sign of a riboflavin deficiency is cracking of the lips, especially in the corners of the mouth.

Riboflavin is easily destroyed by light so it is usually stored in paper cartons or brown bottles. Make sure you store it the same way.

Vitamin A was first discovered in 1913 when two groups of twin animals were fed quality, well balanced diets except for different forms of fat. Group A was fed butter and Group B was fed lard. Group A thrived. They had sleek hair, bright eyes and bushy tails. Group B had sore eyes, coarse hair and dry skin. Finally, the animals in Group B stopped growing and died. Scientists determined that there was something special in butter that was not present in lard.

They found that the vitamin in butter was Vitamin A. It is fat soluble which means it is carried in fat cells.

One quart of milk supplies 1/3 the recommended daily allowance of Vitamin A. Liver, green leafy vegetables and yellow vegetables and fruits are also good sources.

Vitamin A influences the development of mucous membranes which line the mouth, nose, ears, eyes, lungs-and digestive tract. It is important in preventing night blindness which is the inability to adjust quickly from darkness to light.

### SUMMARY QUESTIONS

1. What is the important mineral found in milk that is difficult to obtain from other food sources?  
CALCIUM
2. What is the vitamin in milk that helps promote growth and is easily destroyed by sunlight?  
RIBOFLAVIN
3. What part of milk is Vitamin A found in?  
THE BUTTERFAT OR CREAM

## OSTEOPOROSIS PREVENTION

**DIRECTIONS:** Use the following information to stimulate a class discussion about the effects of calcium intake and a healthy diet in reducing the risk of getting osteoporosis.

Hold up two carrots or pieces of celery--one wilted, the other fresh and firm. Ask students if they know how our bones are similar to the two vegetables.

We probably all know an elderly relative or friend who has fractured a hip from a minor fall. The cause of the fracture could have been OSTEOPOROSIS which means porous bones. This disease affects 6 million people, mostly women, in the United States. In addition to the 3 billion dollars for health care costs, the personal cost with limited mobility and constant pain is dramatic.

Our bones are made of a collage-like matrix made rigid by mineral deposits--mostly calcium and phosphorous. Even if bone looks solid, it is constantly being broken down and rebuilt. Calcium and phosphorus move back and forth between the blood and the bones. Up to about age thirty-five bones gain minerals or build bone mass. After thirty-five, the mineral mass of the bone begins to decrease.

Besides maintaining strong bones and teeth, calcium has many jobs in the body such as regulating nerve and muscle impulses, muscle contractions and blood coagulation. The calcium level of the blood is kept at a certain level. If it falls below this level, calcium is withdrawn from the bones. If this continues over a long period of time, the bones become more porous, thin and fragile. This is known as osteoporosis. Even small falls can cause bones to break.

Even if the results of this disease are not seen until later in life, the development is a long-term process. Several risk factors are associated with the disease. Some you cannot do much about like your age, your sex and your heredity. Others, however, such as diet, exercise and lifestyle can be changed.

### **CONTROLLABLE RISK FACTORS**

#### Physical Activity

Bones become thicker or thinner in response to use. Physical activity can help build and maintain strong bones.

Many of the things some people do, such as drinking alcoholic beverages, smoking, or taking certain kinds of drugs causes bones to lose mass.

Calcium Intake

Getting adequate calcium helps the body build and maintain bone mass. We should be sure we are satisfying our daily calcium needs.

Girls and women are more at risk than men because they begin with lower bone mass. Also, men are usually more active than women and weight-bearing activity increases bone mass.

The best treatment for osteoporosis is prevention, which should begin early. Adolescence is a time of rapid bone growth. Unfortunately, the usual calcium intake in the U.S. is 450 to 500 mg.--well below the RDA of 1200 mg. for teens. A poor diet at this point might increase one's chances of osteoporosis in later years. Sadly, teens often make poor food choices like preferring pop to milk. Pop contains phosphoric acid which is phosphorus. The resulting diet is high in phosphorus and low in calcium. Calcium and phosphorus need to work together in the right amounts to be well absorbed by the body. Research indicates a high phosphorus intake and a low calcium intake results in the body pulling calcium out of the bones to work with the calcium. This means the bones become weaker instead of stronger.

Unhealthy dieting--with low dairy product consumption--which usually results in low calcium consumption is very common among women. This adds to the problem.

There is NO CURE for osteoporosis. It is PREVENTABLE. While you are young, there are choices you can make that will prevent this condition from affecting your life. You can build strong bones by getting plenty of calcium, doing aerobic exercise and choosing a healthy lifestyle. Keep your bones looking like the crisp vegetable instead of the wilted one.

(Resources: Weiner, Leslie. Osteoporosis: Teaching Prevention Since There Is No Cure. Forecast for Home Economics, Feb. 1986. Osteoporosis--How To Prevent It--How To Live With It. Krames Communications., 1986.)

**SUMMARY QUESTIONS:**

1. Name two aspects of a lifestyle that can be changed to help prevent getting osteoporosis.  
INCREASE AEROBIC ACTIVITY, DO NOT SMOKE, DO NOT DRINK ALCOHOL, DO NOT TAKE DRUGS.
2. How many milligrams of calcium should a teenager get each day?  
1200 MG
3. What is the cure for osteoporosis?  
THERE IS NO CURE FOR OSTEOPOROSIS

## CALCIUM LEVELS IN VARIOUS FOODS

**DIRECTIONS:** You may wish to make a poster out of this chart. Display it for class discussion. Another option would be to place a picture of each of the foods on a separate card. Put the amounts of calcium found in each food on the back of the picture. Give the cards to students and have them share with the class the amounts of each food it would take to equal four cups of milk. **FOOD AMOUNTS WHICH GIVE 1200 MILLIGRAMS OF CALCIUM--THE RDA FOR KIDS 11-14 YEARS OF AGE.**

IT WOULD TAKE--

4 CUPS MILK

57 SLICES WHITE BREAD

240 CUPS COOKED WHITE RICE

44 CARROTS

75 DOUGHNUTS

120 APPLES

16 CANTALOUPE

2-1/2 CUPS YOGURT

400 HOT DOGS

133 HAMBURGERS

43 EGGS

27 BOLOGNA SANDWICHES

150 CUPS CANNED CORN

12 CUPS FROZEN BROCCOLI

### SUMMARY QUESTIONS:

1. How much calcium is contained in four cups of milk?  
ABOUT 1200 MILLIGRAMS
2. How many cups of milk do teenagers need each day?  
FOUR CUPS
3. How many hot dogs must be eaten to obtain the equivalent of calcium found in four cups of milk?  
400

## BASIC CREAM SAUCE

**DIRECTIONS:** Demonstrate the principles involved in making a basic cream sauce. The basic fat and flour mixture is called a roux. It is the beginning of many sauces. Hollandaise and salad dressings are thickened with egg yolks. Puddings and pie fillings are often thickened with cornstarch. Basic cream white sauce is thickened with flour. The basic recipe for cream sauce:

|        | MARGARINE | FLOUR   | MILK  |
|--------|-----------|---------|-------|
| THIN   | 1 Tbsp.   | 1 Tbsp. | 1 cup |
| MEDIUM | 2 Tbsp.   | 2 Tbsp. | 1 cup |
| THICK  | 3 Tbsp.   | 3 Tbsp. | 1 cup |

(Have students copy this chart. You may add 1/2 cup grated cheese to this recipe and have students dip microwaved broccoli or cauliflower in it.)

### SCIENTIFIC PRINCIPLES INVOLVED:

\*\*Milk requires a low temperature to prevent scorching.

\*\*Starch grains need to be separated with cold liquid or melted fat to prevent lumping.

### PROCEDURE:

1. Melt the fat over low heat. Butter and margarine are most often used because their flavor is preferred.
2. Blend the flour with the melted fat to prevent lumps. Cook the mixture over low heat until bubbly to prevent a raw-starch flavor.
3. Remove the cooked fat and flour mixture from the range so that the milk can be quickly blended. If you add hot liquid and stir well, the mixture will never get lumpy.
4. Cook the milk mixture over low heat with constant stirring to prevent lumps until it reaches a boil and is thickened.
5. If the sauce should curdle or separate, whisk in a teaspoon or two of boiling water, a drop at a time.

### SUMMARY QUESTIONS:

1. What is the French term for a basic fat and flour mixture?  
ROUX
2. What thickening agent makes the white sauce thicken?  
FLOUR
3. What are the proportions of fat, flour and milk in a medium white sauce?  
2 TBSP. FAT, 2 TBSP. FLOUR AND 1 CUP MILK

## COMPARING MILK PRODUCTS

**DIRECTIONS:** Purchase the milk products in paper cartons (except evaporated milk). You will need to mark the price of each product. Make sure the products have nutrition labels. You can use the information below if it is not found on the label.

**PRODUCTS:** Whole milk, non-fat dry milk, chocolate milk, ice cream, evaporated milk, cottage cheese, 2% milk, buttermilk, yogurt, and half-and-half

You may rank each product according to how many calories/serving it contains. Notice they have the same amounts of calcium. (Do not use whipping cream, half and half, butter, or ice cream.)

**DISCUSS** the basic information about each product with the class.

### WHIPPING CREAM

Serving Size: 1 Tbsp.  
Calories: 80  
Protein: Trace  
Fat: 1 gram  
Calcium: 10 grams

### ICE CREAM

Serving Size: 1 Cup  
Calories: 270  
Protein: 5 gin.  
Fat: 14 gin.  
Calcium: 176 grams

### HALF-AND-HALF

Serving Size: 1 Tbsp.  
Calories: 20  
Protein: Trace  
Fat: 2 gm.  
Calcium: 16 grams

### EVAPORATED MILK

Serving Size: 1 Cup  
Calories: 340  
Protein: 17 gm.  
Fat: 19 gm.  
Calcium: 657 grams

### BUTTER

Serving Size: 1 Tbsp.  
Calories: 100  
Fat: 12 gm.  
Calcium: 3 mg.

**\*\*TEACHER NOTE:** The milk products used in this motivator are also needed to complete the activity, "Supermarket Sweep".

## TASTY CHEESE

**DIRECTIONS:** Purchase the following kinds of cheese: Swiss, mild cheddar, American, Monterey Jack. (You may substitute other types.) Cut into small cubes. Place a small sign with the kind and price per pound by each. Have toothpicks available to spear each sample. Let students try the different types and complete the TASTY CHEESE CHART.

**YOU MAY WISH TO SERVE A COUPLE OF CRACKERS TO EACH STUDENT TO GO LONG WITH THE CHEESE.**

### CHEESE MAKING

Cheese making is an ancient art. It is thought to have originated with some desert traveler who was on a long journey. At that time there were no bags, so he carried some milk along in the cleaned-out stomach of a cow. When he reached his destination, he found the milk had turned to a solid. Tasting some of the mixture, he found it was quite good. There is a natural enzyme, rennin, in the cow's stomach which causes the milk protein (the solid part) to settle out from the liquid. The solid part is called the curd and the liquid part is called whey. Cheese is still made today with rennin, which is taken from a cow's stomach. The curd is cut and stirred to remove the whey. The curd is then mixed with salt and packed into cheesecloth-lined hoops. The cheese is called green cheese at this point. This green cheese is dried for several days and then coated with hot paraffin wax to prevent moisture loss during the aging process or curing time. It is aged in a temperature controlled room. It is cured a short time for mild cheese, longer for medium sharp and longer still for sharp cheese. The longer the cheese is aged, the more expensive the cheese will be because storage costs money.

Depending on the recipe used, the cheese will have changes in texture and flavor. Some become softer, others become harder and even crumbly and others change flavor. Some cheeses even develop holes like Swiss cheese which is injected with carbon dioxide gas.

## CHEESE COOKERY

Cheese is made from milk. Because of this, the same principles that apply to milk cookery apply to cheese cookery. It is a high protein food. A low heat should always be used.

A hard cheese softens and then melts when heated at low to moderate temperatures. Further heating results in the separation of fat and the development of a tough, rubbery curd, which will form long strings when stirred with a spoon. The cheese will harden on cooling.

Use ripened cheese in cookery, because unripened cheese may not blend with the other ingredients.

Grating the cheese before combining it with other foods helps it to melt without overheating. It is also a good idea to bring the cheese to room temperature before heating. Cheese sauces should be cooked in a double boiler or over very low heat with continuous stirring. Well-ripened and processed cheeses blend better in mixtures than mild natural cheese and are less likely to produce stringiness.

Cheese dishes should be served hot immediately after the cooking is completed. All cheeses must be cooked carefully as they can become tough and rubbery if the temperature is too high or cooking time is too long.

Sometimes cheese is protected while cooking: in grilled cheese sandwiches, the bread covers the cheese; in pizza, the sauce protects the cheese.

Cheese can be added to many foods. It improves their nutritional value. When added to vegetables, pastas, or legumes it improves their protein value so they can be used as a meat substitute.

Cheese is used in pastries, fondues, souffles, soups and as a filling for pasta.

### SUMMARY QUESTIONS:

1. Principles that apply to cheese cookery apply to what other protein food?  
MILK
2. Always use what temperature when cooking cheese?  
LOW
3. What are the two results of cooking cheese improperly?  
ANY TWO: STRINGY, TOUGH, RUBBERY



MILK, YOGURT, & CHEESE GROUP-----INDIVIDUALIZED ACTIVITY

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

### COMPUTER PROGRAM--ANSWER INVASION

1. Check the computer program out from the teacher.
2. Play the game ANSWER INVASION.
3. YOU MUST KEEP THE COMPUTER DISC IN AND THE CAPS LOCK DOWN AT ALL TIMES.
4. When you have answered 25 questions correctly, have the teacher check off your Dairy assignment sheet and give you 20 points.
5. If you can answer the 25 questions with less than thirty shots fired, you can have 10 extra lab points.

GOOD LUCK!

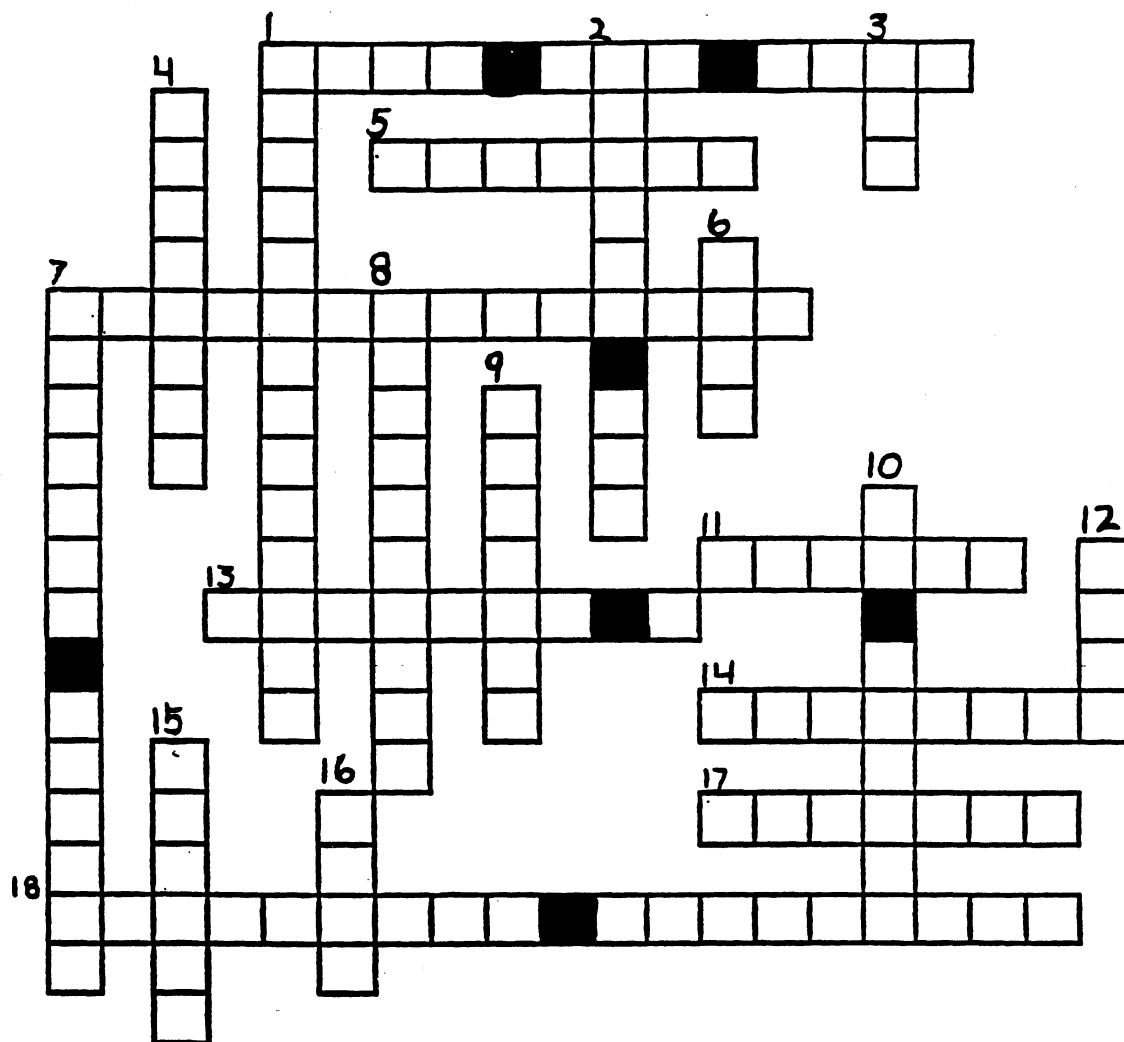
## MILK, YOGURT, &amp; CHEESE GROUP-----INDIVIDUALIZED ACTIVITY

NAME \_\_\_\_\_

CLASS \_\_\_\_\_

## DAIRY CROSSWORD PUZZLE

DIRECTIONS: Read the chapter in your text book that explains about milk and cheese. Fill in the blanks below.

**ACROSS CLUES**

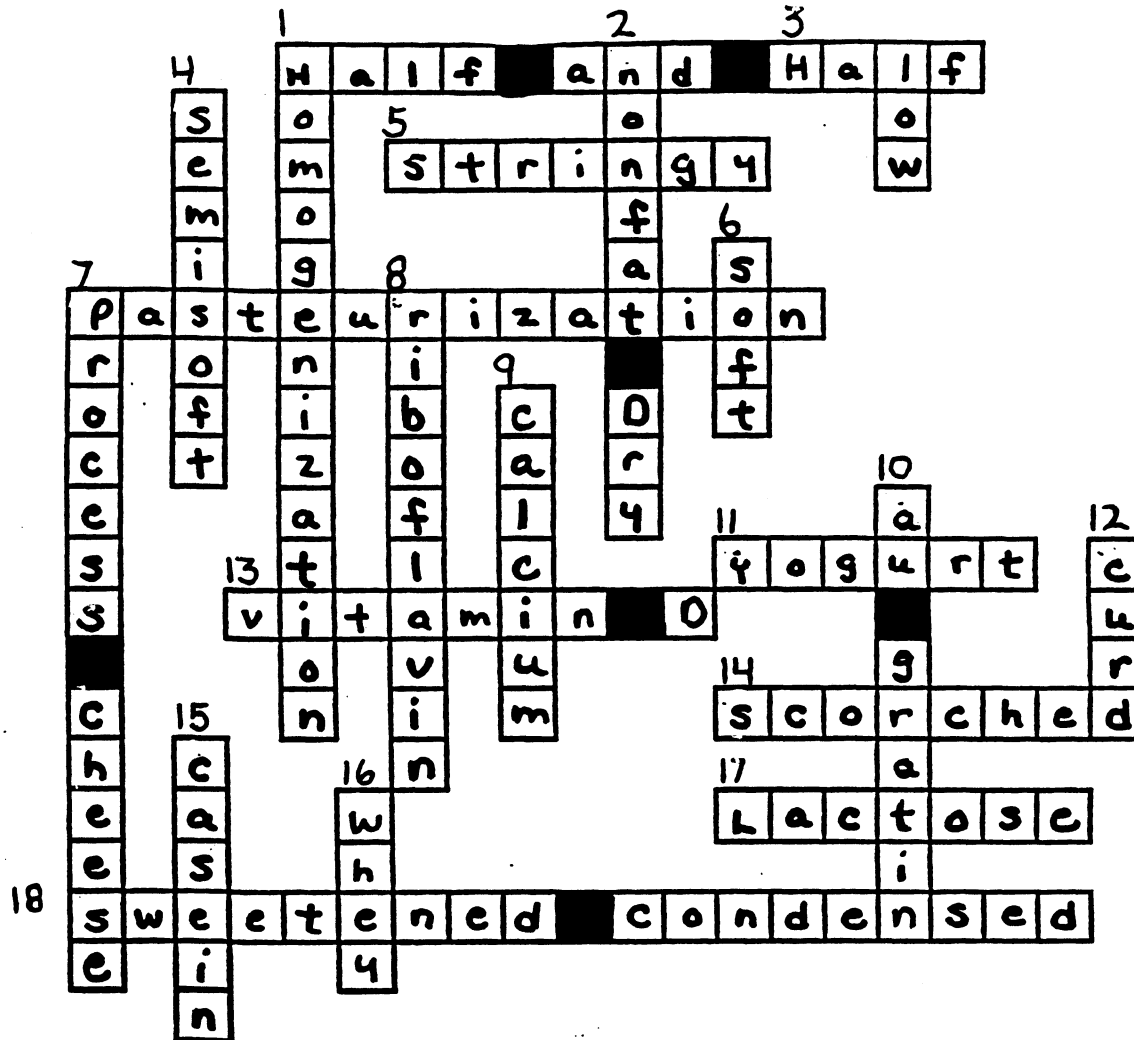
1. Blend of milk and cream with 10 to 12% fat.
5. The results of cooking cheese at too high a temperature.
7. Process of heating milk to destroy harmful bacteria.
11. A custard-like product made by fermenting skim milk.
13. A fat soluble vitamin added to milk.
14. The results of using too hot a temperature when cooking milk.
17. The carbohydrate or sugar found in milk.
18. Canned milk with 60% of the water removed and 45% sugar added.

**DOWN CLUES**

1. Process of breaking down fat globules so they stay permanently distributed throughout a food.
2. Skim milk which has had the water removed.
3. The temperature to use when cooking milk and cheese.
4. Examples are Roquefort, Muenster and Gorgonzola.
6. Examples are cottage, cream and Neufchatel.
7. A blend of two or more cheeses.
8. Milk is the best food source of this vitamin.
9. The chief mineral found in dairy products.
10. Foods cooked in a cheese sauce.
12. The solid part of coagulated milk.
15. The chief protein found in dairy products.
16. The liquid remaining after milk has formed curds.

MILK, YOGURT, &amp; CHEESE GROUP-----\*\*\*KEY\*\*\*

## DAIRY CROSSWORD PUZZLE--KEY

**ACROSS CLUES**

- Blend of milk and cream with 10 to 12% fat.
- The results of cooking cheese at too high a temperature.
- Process of heating milk to destroy harmful bacteria.
- A custard-like product made by fermenting skim milk.
- A fat soluble vitamin added to milk.
- The results of using too hot a temperature when cooking milk.
- The carbohydrate or sugar found in milk.
- Canned milk with 60% of the water removed and 45% sugar added.

**DOWN CLUES**

- Process of breaking down fat globules so they stay permanently distributed throughout a food.
- Skim milk which has had the water removed.
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- Examples are Roquefort, Muenster and Gorgonzola.
- Examples are cottage, cream and Neufchatel.
- A blend of two or more cheeses.
- Milk is the best food source of this vitamin.
- The chief mineral found in dairy products.
- Foods cooked in a cheese sauce.
- The solid part of coagulated milk.
- The chief protein found in dairy products.
- The liquid remaining after milk has formed curds.

MILK, YOGURT, & CHEESE GROUP-----INDIVIDUALIZED ACTIVITY

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

**DAIRY DISCOVERY**

**DIRECTIONS:** Complete this chart by using the food comparison cards to find the following information.

One point for each correct dairy product. 20 points possible.

| FOOD               | Serving (size) | Calories (Kcal) | % Calcium | % Riboflavin | % of 2000 cal. | % of daily fat budget |
|--------------------|----------------|-----------------|-----------|--------------|----------------|-----------------------|
| 1. Milk            |                |                 |           |              |                |                       |
| 2. Chocolate Milk  |                |                 |           |              |                |                       |
| 3. Soft Drink      |                |                 |           |              |                |                       |
| 4. Cottage Cheese  |                |                 |           |              |                |                       |
| 5. American Cheese |                |                 |           |              |                |                       |
| 6. Swiss Cheese    |                |                 |           |              |                |                       |
| 7. Ice Cream       |                |                 |           |              |                |                       |
| 8. Milkshake       |                |                 |           |              |                |                       |
| 9. Fruit Yogurt    |                |                 |           |              |                |                       |
| 10. Pudding        |                |                 |           |              |                |                       |

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

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

15-16. Which two have the highest number of calories per serving?

17-18. Which two have the lowest number of calories per serving?

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

MILK, YOGURT, &amp; CHEESE GROUP-----\*\*\*KEY\*\*\*

## DAIRY DISCOVERY--KEY

| FOOD                   | Serving (size) | Calories (Kcal) | % Calcium | % Riboflavin | % of 2000 cal. | % of daily fat budget |
|------------------------|----------------|-----------------|-----------|--------------|----------------|-----------------------|
| 1. Milk                | 1 cup          | 150             | 29        | 23           | 8              | 12                    |
| 2. Chocolate Milk      | 1 cup          | 179             | 28        | 24           | 9              | 7                     |
| 3. Soft Drink          | 12 fl. oz.     | 151             | 1         | 0            | 8              | 0                     |
| 4. Cottage Cheese      | 1/2 cup        | 102             | 8         | 12           | 5              | 3                     |
| 5. American Cheese     | 1 oz.          | 106             | 17        | 6            | 5              | 13                    |
| 6. Swiss Cheese        | 1 oz.          | 107             | 27        | 6            | 5              | 12                    |
| 7. Chocolate Ice Cream | 1/2 cup        | 135             | 9         | 10           | 7              | 10                    |
| 8. Milkshake           | 10 fl. oz.     | 360             | 32        | 41           | 18             | 16                    |
| 9. Fruit Yogurt        | 1 cup          | 225             | 31        | 22           | 11             | 4                     |
| 10. Pudding            | 1/2 cup        | 155             | 13        | 11           | 8              | 6                     |

- 11-12. Which two are the best sources of calcium per serving?  
MILKSHAKE, FRUIT YOGURT
- 13-14. Which two are the best sources of riboflavin per serving?  
MILKSHAKE, CHOCOLATE MILK
- 15-16. Which two have the highest number of calories per serving?  
MILKSHAKE, FRUIT YOGURT
- 17-18. Which two have the lowest number of calories per serving?  
COTTAGE CHEESE, AMERICAN CHEESE
- 19-20. Which two do you like the most?  
VARIOUS ANSWERS

MILK, YOGURT, & CHEESE GROUP-----INDIVIDUALIZED ACTIVITY

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

**MILK ON PARADE**

DIRECTIONS: Categorize the dairy products into different groups and list their definitions as you listen to the class discussion.

- |                |                     |             |            |
|----------------|---------------------|-------------|------------|
| HARD           | PASTEURIZED         | HOMOGENIZED | WHOLE MILK |
| BUTTERMILK     | HALF-AND-HALF       | ICE CREAM   | SEMISOFT   |
| SOUR CREAM     | SWEETENED CONDENSED | LOWFAT      | BUTTER     |
| WHIPPING CREAM | PROCESSED CHEESE    | NONFAT DRY  | SKIM       |
| EVAPORATED     | UNRIPENED           | FLAVORED    | YOGURT     |

| TYPE OF MILK | DEFINITION |
|--------------|------------|
| SWEET MILK   |            |
| 1.           |            |
| 2.           |            |
| 3.           |            |
| 4.           |            |
| 5.           |            |
| 6.           |            |
|              |            |
| CONCENTRATED |            |
| 7.           |            |
| 8.           |            |
| 9.           |            |
|              |            |
| CULTURED     |            |
| 10.          |            |
| 11.          |            |
|              |            |
| CREAM        |            |
| 12.          |            |
| 13.          |            |
| 14.          |            |
| 15.          |            |
| 16.          |            |
|              |            |
| CHEESE       |            |
| 17.          |            |
| 18.          |            |
| 19.          |            |
| 20.          |            |

MILK, YOGURT, &amp; CHEESE GROUP-----\*\*\*KEY\*\*\*

## MILK ON PARADE--KEY

| TYPE OF MILK        | DEFINITION  |
|---------------------|---|
| <b>SWEET MILK</b>   |   |
| 1. PASTEURIZED      | Heat treated to kill harmful bacteris             |
| 2. HOMOGENIZED      | Fat globules separated so cream will not separate |
| 3. LOWFAT           | Milk which contains 1/2 to 2% butterfat           |
| 4. WHOLE            | Milk which contains about 3.5% butterfat          |
| 5. SKIM             | Milk which contains .5 to 1.0% butterfat          |
| 6. FLAVORED         | Milk to which flavor is added (chocolate)         |
| <b>CONCENTRATED</b> |   |
| 7. EVAPORATED       | Canned milk with 60% of the water evaporated      |
| 8. SWEETENED        | 60% of the water removed and 45% sugar added      |
| 9. NONFAT DRY       | Skim milk which has had the water removed         |
| <b>CULTURED</b>     |   |
| 10. BUTTERMILK      | Cultured skim milk                                |
| 11. YOGURT          | Custard-like fermented milk produce               |
| <b>CREAM</b>        |   |
| 12. SOUR CREAM      | Soured and thickened product with 18% fat         |
| 13. WHIPPING CREAM  | Heavy cream with about 35% fat                    |
| 14. HALF-AND-HALF   | Blend of milk and cream with 10% fat              |
| 15. BUTTER          | The fat of cream separated by churning            |
| 16. ICE CREAM       | A frozen mixture of cream, milk, flavorings       |
| <b>CHEESE</b>       |   |
| 17. PROCESSED       | A blend of cheeses                                |
| 18. UNRIPENED       | Soft, unaged cheese such as cream or cottage      |
| 19. HARD            | Made from milk and ripened to a hard texture      |
| 20. SEMISOFT        | Cheese ripened to a semisoft consistency          |

## SHOPPING FOR DAIRY PRODUCTS

### Saving on Food Prices

**SHOP FOR ITEMS ON SALE:** Most grocery stores have special weekly sales on different items and brands. Check for these specials in weekly advertisements found in local newspapers.

**CHECK THE UNIT PRICE LABELS:** The lower priced package is not always the better buy. Calculate which package costs less per pound or ounce by looking at the unit price label on the shelf. You can't just guess at the price, a package that costs more and looks bigger may actually be smaller than the lower priced package.

Check these milk prices and figure the unit prices per pint.

|       |                      | PRICE PER PINT |
|-------|----------------------|----------------|
| WHOLE | GALLON (\$2.39)      | .30            |
| WHOLE | HALF GALLON (\$1.49) | .37            |
| WHOLE | QUART (\$.89)        | .45            |
| WHOLE | PINT (\$.69)         | .69            |

**COMPARE PRICES ON BRANDS:** Even if one brand is on a special sale, check to make sure that another brand is not less expensive.

**CHECK THE HOUSE BRAND:** Many large supermarket chains have their own brands of canned foods, frozen foods and household products. These are called house brands. Examples: Albertsons--Janet Lee or Albertson's Brands  
Smiths: Kingston

These are usually just as good as nationally advertised products and are usually cheaper. In fact, they are usually prepared by the national organizations and just packaged in a different wrapper. Remember to compare prices though. A house brand does not guarantee that it will be your best buy.

**STOCK UP!** When you see a good bargain, stock up for the weeks ahead. If you have adequate storage space, stock up on often used items will save money on the item, decrease travel expenses, and save time in shopping.

**NONFAT DRY:** Nonfat dry milk is a wholesome dairy product made from fresh milk. Only the cream and water are removed. It still contains the calcium and other minerals that make liquid milk such a valuable food.

Long before the birth of Christ, the ancient Egyptians prepared a concentrated milk by drying it in the sun.

The protein, minerals and vitamin B complex are all contained in the skim milk, not in the cream.



MILK, YOGURT, & CHEESE GROUP\*\*\*\*\*STUDENT GUIDE

Powdered skim milk is a great food bargain. You can lessen your milk bill considerably with powdered skim milk. You can also supplement your diet with the valuable proteins and vitamins and minerals found in this wonderful food.

A teaspoon of nonfat dry milk powder mixed into beaten eggs makes wonderful scrambled eggs for breakfast. Added to puddings or soups, an extra tablespoon of powdered milk will add extra nutrition. An extra-juicy, extra-rich broiled hamburger can be made by adding a tablespoon of nonfat dry milk powder to the meat.

|                 | PRICE/QUART | ANNUAL PRICE/<br>FAMILY OF 4<br>(1095 quarts/year) |
|-----------------|-------------|--|
| WHOLE MILK      | .60         | \$657.00   |
| 2% MILK         | .55         | \$602.25   |
| SKIM MILK       | .52         | \$569.40   |
| NONFAT DRY MILK | .33         | \$361.35   |
| EVAPORATED MILK | .92         | \$1007.40  |

2 cups = 1 pint

2 pints = 1 quart

4 quarts = 1 gallon

MILK, YOGURT, &amp; CHEESE GROUP-----INDIVIDUALIZED ACTIVITY

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

**SHOPPING FOR DAIRY PRODUCTS**

**DIRECTIONS:** Check the products in the classroom and answer the questions.  
**MACARONI AND CHEESE**

| VARIETY     | NAME ON LABEL | SERVINGS/PACKAGE | PRICE | PRICE/SERVING | TIME TO PREPARE |
|-------------|---------------|------------------|-------|---------------|-----------------|
| NAME BRAND  |               |                  |       |               |                 |
| HOUSE BRAND |               |                  |       |               |                 |
| FROZEN      |               |                  |       |               |                 |
| CANNED      |               |                  |       |               |                 |
| HOMEMADE    |               |                  |       |               |                 |

**PUDDING** \*Don't forget to add the price of milk to the package puddings, 2 cups = 26 cents

| VARIETY      | NAME ON LABEL | SERVINGS/PACKAGE | PRICE | PRICE/SERVING | TIME TO PREPARE |
|--------------|---------------|------------------|-------|---------------|-----------------|
| REFRIGERATED |               |                  |       |               |                 |
| SNACK PACK   |               |                  |       |               |                 |
| INSTANT PKG. |               |                  |       |               |                 |
| COOKED PKG.  |               |                  |       |               |                 |
| HOMEMADE     |               |                  |       |               |                 |

Read the student guide and answer the questions on m back of this sheet.

- Which macaroni and cheese is the most expensive per serving?
- Which macaroni and cheese is the least expensive per serving?
- Which macaroni and cheese takes the longest to prepare?
- Which macaroni and cheese takes the least time to prepare?
- Which pudding is the most expensive per serving?
- Which pudding is the least expensive per serving?
- Which pudding takes the longest time to prepare?
- Which pudding takes the shortest time to prepare?
- How much is one quart of whole milk when purchased by the gallon?
- How much is one quart of whole milk when purchased by the half gallon?
- How much is one quart of whole milk when purchased by the quart?
- Which is the most economical way to purchase whole milk?
- Which civilization is thought to have first prepared dried milk?
- What type of milk is the biggest food bargain of all?
- Name five ways to save when shopping at the supermarket.
- How much can be saved yearly by using nonfat dry milk rather than whole milk?

MILK, YOGURT, &amp; CHEESE GROUP-----INDIVIDUALIZED ACTIVITY

## SHOPPING FOR DAIRY PRODUCTS--HOMEMADE PRICES

## HOMEMADE CHOCOLATE CREAM PUDDING

Makes 4 servings. Preparation Time: 15 minutes.

| INGREDIENT         | PRICE |
|--------------------|-------|
| 1/3 cup sugar      | .05   |
| 2 Tbsp. cornstarch | .02   |
| 1/4 tsp. salt      | .01   |
| 2 cups milk        | .28   |
| 2 egg yolks        | .14   |
| 1/4 cup margarine  | .08   |
| 2 tsp. vanilla     | .01   |
| 1/4 cup cocoa      | .25   |

## HOMEMADE MACARONI AND CHEESE

Makes 4 servings. Preparation Time: 20 minutes

| INGREDIENT            | PRICE |
|-----------------------|-------|
| 1 cup milk            | .14   |
| 2 Tbsp. margarine     | .04   |
| 2 Tbsp. flour         | .02   |
| 1/2 tsp. salt         | .01   |
| 1/2 cup grated cheese | .70   |
| 1 Tbsp. oil           | .02   |
| 1 cup macaroni        | .20   |

MILK, YOGURT, &amp; CHEESE GROUP-----INDIVIDUALIZED ACTIVITY

NAME \_\_\_\_\_

CLASS \_\_\_\_\_

**SUPERMARKET SWEEP**

One point for each correct answer per number. 20 points possible. Your teacher will correct this worksheet.

| Type of Milk Product | Protein/<br>Serving | Calories/<br>Serving | Fat/<br>Serving | Cost/<br>Serving |
|----------------------|---------------------|----------------------|-----------------|------------------|
| 1. Whole Milk        |                     |                      |                 |                  |
| 2. Non-fat Milk      |                     |                      |                 |                  |
| 3. Chocolate Milk    |                     |                      |                 |                  |
| 4. Ice Cream         |                     |                      |                 |                  |
| 5. Evaporated Milk   |                     |                      |                 |                  |
| 6. Cottage Cheese    |                     |                      |                 |                  |
| 7. 2% Milk           |                     |                      |                 |                  |
| 8. Buttermilk        |                     |                      |                 |                  |
| 9. Yogurt            |                     |                      |                 |                  |
| 10. Half & Half      |                     |                      |                 |                  |

Answer these questions on the back of this sheet.

11. Which product contains the most protein per serving?
12. Which product contains the least amount of protein per serving?
13. Which product has the most calories per serving?
14. Which product contains the least amount of calories per serving?
15. Which product has the most fat grams per serving?
16. Which product has the least amount of fat grams per serving?
17. Which product is the most expensive per quart?
18. Which product is the least expensive per quart?
19. Which products have had a bacteria added to give a tangy flavor?
20. Which product do you most enjoy eating?

MILK, YOGURT, &amp; CHEESE GROUP-----INDIVIDUALIZED ACTIVITY

NAME \_\_\_\_\_

CLASS \_\_\_\_\_

**TASTY CHEESE WORKSHEET**

| <b>NAME</b>              | <b>COST/POUND</b> | <b>TEXTURE</b> | <b>FLAVOR</b> | <b>RATING</b> |
|--------------------------|-------------------|----------------|---------------|---------------|
| <b>SWISS</b>             |                   |                |               |               |
| <b>CHEDDAR</b>           |                   |                |               |               |
| <b>AMERICAN</b>          |                   |                |               |               |
| <b>MONTEREY<br/>JACK</b> |                   |                |               |               |

**TEXTURE--Firm, crumbly, smooth****FLAVOR--Mild, strong, sharp****RATING--Rate from 1 to 10 as to how you liked the taste.****10 - Liked most      1 = Liked Least**

1. Which cheese is the most expensive?
2. Which cheese is the least expensive?
3. Which cheese did you like best?
4. Which cheese did you like least?

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

### DAIRY BINGO

DIRECTIONS: Pick out 25 words from the list below and write them on your DAIRY BINGO CARD.

RAW  
HOMOGENIZED  
SCUM  
FORTIFIED  
SKIM  
PROCESSED  
WHEY  
CURDLED  
HALF-AND-HALF  
SWEETENED CONDENSED  
BUTTERMILK

CALCIUM  
SOFT  
STRINGY  
LOW  
SCORCHED  
RIBOFLAVIN  
CURDS  
VITAMIN D  
GRATE  
VITAMIN A  
CREAM SAUCE

OSTEOPOROSIS  
BUTTER  
WHIPPING CREAM  
SOUR CREAM  
EVAPORATED  
PROTEIN  
PASTEURIZED  
LACTOSE  
WHOLE MILK  
YOGURT

|  |  |  |  |  |
|--|--|--|--|--|
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

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

NAME \_\_\_\_\_

CLASS \_\_\_\_\_

**DAIRY BINGO REVIEW****DIRECTIONS:** Fill in the blanks and use as a review while you play bingo.

- |       |   |
|-------|---|
| _____ | 1. Milk treated to break the cream into tiny globules.      |
| _____ | 2. A tart, coagulated custard-like product.                 |
| _____ | 3. Vitamin which helps prevent night blindness.             |
| _____ | 4. By law, this contains about 3.5% butterfat.              |
| _____ | 5. Canned milk with half the water removed and sugar added. |
| _____ | 6. A mixture of milk and cream with 10 to 18% milkfat.      |
| _____ | 7. Most abundant mineral found in the body.                 |
| _____ | 8. The kind that is unripened such as cottage cheese.       |
| _____ | 9. The sunshine vitamin added to milk.                      |
| _____ | 10. This happens when an acid is added to milk.             |
| _____ | 11. A basic white sauce made of fat, flour and milk.        |
| _____ | 12. The solid part in making cheese.                        |
| _____ | 13. The liquid part in making cheese.                       |
| _____ | 14. Nutrient in milk that builds and repairs body tissues.  |
| _____ | 15. Milk that has been heated to kill harmful bacteria.     |
| _____ | 16. Growth promoting vitamin easily destroyed by sunlight.  |
| _____ | 17. Disease caused by lack of calcium.                      |
| _____ | 18. Canned whole milk with 60% of the water removed.        |
| _____ | 19. A term used for burned milk.                            |
| _____ | 20. Light cream made sour by adding lactic acid.            |
| _____ | 21. Use this temperature to cook milk products.             |
| _____ | 22. Heavy cream with 36-40% butterfat.                      |
| _____ | 23. Milk sugar which settles out during cooking and burns.  |
| _____ | 24. A blend of cheeses such as American.                    |
| _____ | 25. A film which may form while cooking milk.               |

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

\*\*\*DAIRY BINGO--KEY\*\*\*

## DAIRY BINGO REVIEW KEY

DIRECTIONS: Fill in the blanks and use as a review while you play bingo.

- |                      |   |
|----------------------|---|
| <u>HOMOGENIZED</u>   | 1. Milk treated to break the cream into tiny globules.                            |
| <u>YOGURT</u>        | 2. A tart, coagulated custard-like product.                                       |
| <u>VITAMIN A</u>     | 3. Vitamin which helps prevent night blindness.                                   |
| <u>WHOLE MILK</u>    | 4. By law, this contains about 3.5% butterfat.                                    |
| <u>SWEETENED</u>     | 5. Canned milk with half the water removed and sugar added.                       |
| <u>CONDENSED</u>     |   |
| <u>HALF AND HALF</u> | 6. A mixture of milk and cream with 10 to 18% milkfat.                            |
| <u>CALCIUM</u>       | 7. Most abundant mineral found in the body.                                       |
| <u>SOFT</u>          | 8. The kind that is unripened such as cottage cheese.                             |
| <u>VITAMIN D</u>     | 9. The "sunshine vitamin" added to milk.  |
| <u>CURDLED</u>       | 10. This happens when an acid is added to milk.                                   |
| <u>CREAM SAUCE</u>   | 11. A basic white sauce made of fat, flour and milk.                              |
| <u>CURDS</u>         | 12. The solid part in making cheese.  |
| <u>WHEY</u>          | 13. The liquid part in making cheese.   |
| <u>PROTEIN</u>       | 14. Nutrient in milk that builds and repairs body tissues.                        |
| <u>PASTEURIZED</u>   | 15. Milk that has been heated to kill harmful bacteria.                           |
| <u>RIBOFLAVIN</u>    | 16. Growth promoting vitamin easily destroyed by sunlight.                        |
| <u>OSTEOPOROSIS</u>  | 17. Disease caused by lack of calcium.  |
| <u>EVAPORATED</u>    | 18. Canned whole milk with 60% of the water removed. A term used for burned milk. |
| <u>SCORCHED</u>      | 19. A term used for burned milk.  |
| <u>SOUR CREAM</u>    | 20. Light cream made sour by adding lactic acid.                                  |
| <u>LOW</u>           | 21. Use this temperature to cook milk products.                                   |
| <u>WHIPPING</u>      | 22. Heavy cream with 36-40% butterfat.  |
| <u>LACTOSE</u>       | 23. Milk sugar which settles out during cooking and burns.                        |
| <u>PROCESSED</u>     | 24. A blend of cheeses such as American.  |
| <u>SCUM</u>          | 25. A film which may form while cooking milk.                                     |



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

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

## MILK, YOGURT, &amp; CHEESE TEST

WRITE YOUR ANSWERS ON YOUR OWN PAPER.

1. The three basic ingredients of a cream sauce are:
 

|                           |                           |
|---------------------------|---------------------------|
| A. Fat, flour, milk       | C. Flour, milk, salt      |
| B. Fat, cornstarch, water | D. Fat, cornstarch, flour |
2. Milk which has been heated to destroy harmful bacteria is called:
 

|                |                |
|----------------|----------------|
| A. Homogenized | C. Pasteurized |
| B. Cultured    | D. Fortified   |
3. The point at which a solid turns to a liquid is its:
 

|            |             |
|------------|-------------|
| A. Hottest | C. Warmest  |
| B. Coldest | D. Sweetest |
4. Another name for Vitamin B2 (easily destroyed by sunlight) is:
 

|             |                 |
|-------------|-----------------|
| A. Thiamine | C. Osteoporosis |
| B. Calcium  | D. Riboflavin   |
5. Which of the following is NOT a cultured milk product:
 

|               |                    |
|---------------|--------------------|
| A. Buttermilk | C. Evaporated Milk |
| B. Sour Cream | D. Yogurt          |
6. Which of the following does NOT contribute to getting osteoporosis:
 

|                     |                |
|---------------------|----------------|
| A. Smoking          | C. Using Drugs |
| B. Drinking Alcohol | D. Exercising  |
7. Milk which has its fat molecules broken down so it will not separate is:
 

|                |                |
|----------------|----------------|
| A. Pasteurized | C. Homogenized |
| B. Fortified   | D. Cultured    |
8. Milk is often fortified with the sunshine vitamin:
 

|               |              |
|---------------|--------------|
| A. Riboflavin | C. Vitamin D |
| B. Vitamin C  | D. Niacin    |
9. The thickening agent in a basic cream sauce is:
 

|                   |          |
|-------------------|----------|
| A. Soybean starch | C. Flour |
| B. Cornstarch     | D. Sugar |
10. All protein foods including dairy products should be cooked with:
 

|                  |                |
|------------------|----------------|
| A. High heat     | C. Low heat    |
| B. Moderate heat | D. Medium heat |
11. What is added to whipping cream and ice cream to make them fluffy?
 

|          |         |
|----------|---------|
| A. Cream | C. Air  |
| B. Sugar | D. Milk |
12. The film which may form on milk during cooking is:
 

|         |              |
|---------|--------------|
| A. Skim | C. Scurvy    |
| B. Scum | D. Processed |

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

TEST, continued

**TRUE OR FALSE--WRITE OUT THE WHOLE WORD:**

- \_\_\_\_\_ 13. Whole milk contains about half as many calories as skim.
- \_\_\_\_\_ 14. Cheese cooked at a HIGH temperature will become rubbery.
- \_\_\_\_\_ 15. Physical activity can help build and maintain strong bones.
- \_\_\_\_\_ 16. Whipping up a foam on milk will prevent a scum from forming.
- \_\_\_\_\_ 17. Fortified means nutrients have been added to a product.
- \_\_\_\_\_ 18. The solid part of milk in cheese making is the whey.
- \_\_\_\_\_ 19. Examples of unripened cheeses are cream and cottage.
- \_\_\_\_\_ 20. Calcium is a vitamin found in milk.
- \_\_\_\_\_ 21. Milk that is overcooked and burned is called scorched.
- \_\_\_\_\_ 22. The sugar in milk is called sucrose.
- \_\_\_\_\_ 23. Skim milk has about 2% butterfat.
- \_\_\_\_\_ 24. The disease that means porous bones is osteoporosis.
- \_\_\_\_\_ 25. 1200 milligrams or three cups of milk is the RDA recommendation for teenagers each day.
- \_\_\_\_\_ 26. Processed cheese is a blend of cheeses.
- \_\_\_\_\_ 27. If you beat cream too much, it may turn into margarine.

**MATCHING:**

- |           |                     |  |
|-----------|---------------------|--|
| _____ 28. | EVAPORATED          | A. Thickened, fermented milk product often with added fruit. |
| _____ 29. | YOGURT              | B. Whole milk with 60% of the water removed.                 |
| _____ 30. | WHIPPING            | C. Blend of milk and cream with 10% fat.                     |
| _____ 31. | SOUR CREAM          | D. Milk with about 3.5% cream.                               |
| _____ 32. | HALF-AND-HALF       | E. Product thickened and soured with lactic acid bacteria.   |
| _____ 33. | WHOLE MILK          | F. Heavy cream with 36% butterfat.                           |
| _____ 34. | SWEETENED CONDENSED | G. Product with half the water removed and sugar added.      |
| _____ 35. | NONFAT DRY          | H. Most economical milk to use in cooking.                   |

**BONUS QUESTION:**

What do cheese, ice cream and fruit all have in common?

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

\*\*\*TEST KEY\*\*\*

## TEST KEY

1. The three basic ingredients of a cream sauce are:  

|                            |                           |
|----------------------------|---------------------------|
| <u>A. Fat, flour, milk</u> | C. Flour, milk, salt      |
| B. Fat, cornstarch, water  | D. Fat, cornstarch, flour |
2. Milk which has been heated to destroy harmful bacteria is called:  

|                |                       |
|----------------|-----------------------|
| A. Homogenized | <u>C. Pasteurized</u> |
| B. Cultured    | D. Fortified          |
3. The point at which a solid turns to a liquid is its:  

|                   |             |
|-------------------|-------------|
| A. Hottest        | C. Warmest  |
| <u>B. Coldest</u> | D. Sweetest |
4. Another name for Vitamin B2 (easily destroyed by sunlight) is:  

|             |                      |
|-------------|----------------------|
| A. Thiamine | C. Osteoporosis      |
| B. Calcium  | <u>D. Riboflavin</u> |
5. Which of the following is NOT a cultured milk product:  

|               |                           |
|---------------|---------------------------|
| A. Buttermilk | <u>C. Evaporated Milk</u> |
| B. Sour Cream | D. Yogurt                 |
6. Which of the following does NOT contribute to getting osteoporosis:  

|                     |                      |
|---------------------|----------------------|
| A. .Smoking         | C. Using Drugs       |
| B. Drinking Alcohol | <u>D. Exercising</u> |
7. Milk which has its' fat molecules broken down so it won't separate is:  

|                |                       |
|----------------|-----------------------|
| A. Pasteurized | <u>C. Homogenized</u> |
| B. Fortified   | D. Cultured           |
8. Milk is often fortified with the sunshine vitamin:  

|               |                     |
|---------------|---------------------|
| A. Riboflavin | <u>C. Vitamin D</u> |
| B. Vitamin C  | D. Niacin           |
9. The thickening agent in a basic cream sauce is:  

|                   |                 |
|-------------------|-----------------|
| A. Soybean Starch | <u>C. Flour</u> |
| B. Cornstarch     | D. Sugar        |
10. All protein foods including dairy products should be cooked with:  

|                  |                    |
|------------------|--------------------|
| A. High heat     | <u>C. Low heat</u> |
| B. Moderate heat | D. Medium heat     |
11. What is added to whipping cream and ice cream to make them fluffy?  

|          |               |
|----------|---------------|
| A. Cream | <u>C. Air</u> |
| B. Sugar | D. Milk       |
12. The film which may form on milk during cooking is:  

|                |              |
|----------------|--------------|
| A. Skim        | C. Scurvy    |
| <u>B. Scum</u> | D. Processed |

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

\*\*\*TEST KEY\*\*\*

TRUE OR FALSE--WRITE OUT THE WHOLE WORD:

- \_\_\_F\_\_\_ 13. Whole milk contains about half as many calories as skim.  
 \_\_\_T\_\_\_ 14. Cheese cooked at a HIGH temperature will become rubbery.  
 \_\_\_T\_\_\_ 15. Physical activity can help build and maintain strong bones.  
 \_\_\_T\_\_\_ 16. Whipping up a foam on milk will prevent a scum from forming.  
 \_\_\_T\_\_\_ 17. Fortified means nutrients have been added to a product.  
 \_\_\_F\_\_\_ 18. The solid part of milk in cheese making is the whey.  
 \_\_\_T\_\_\_ 19. Examples of unripened cheeses are cream and cottage.  
 \_\_\_F\_\_\_ 20. Calcium is a vitamin found in milk.  
 \_\_\_T\_\_\_ 21. Milk that is overcooked and burned is called scorched.  
 \_\_\_F\_\_\_ 22. The sugar in milk is called sucrose.  
 \_\_\_F\_\_\_ 23. Skim milk has about 2% butterfat.  
 \_\_\_T\_\_\_ 24. The disease that means porous bones is osteoporosis.  
 \_\_\_F\_\_\_ 25. 1200 milligrams or three cups of milk is the RDA recommendation for teenagers each day.  
 \_\_\_T\_\_\_ 26. Processed cheese is a blend of cheeses.  
 \_\_\_F\_\_\_ 27. If you beat cream too much, it may turn into margarine.

**MATCHING:**

- |                                 |  |
|---------------------------------|--|
| ___B___ 28. EVAPORATED          | A. Thickened, fermented milk product often with added fruit. |
| ___A___ 29. YOGURT              | B. Whole milk with 60% of the water removed.                 |
| ___F___ 30. WHIPPING            | C. Blend of milk and cream with 10% fat.                     |
| ___E___ 31. SOUR CREAM          | D. Milk with about 3.5% cream.                               |
| ___C___ 32. HALF-AND-HALF       | E. Product thickened and soured with lactic acid bacteria.   |
| ___D___ 33. WHOLE MILK          | F. Heavy cream with 36% butterfat.                           |
| ___G___ 34. SWEETENED CONDENSED | G. Product with half the water removed and sugar added.      |
| ___H___ 35. NONFAT DRY          | H. Most economical milk to use in cooking.                   |

**BONUS QUESTION:**

What do cheese, ice cream and fruit all have in common?

THEY ALL NEED TO BE RIPENED















Name \_\_\_\_\_

Class \_\_\_\_\_

**HOMEMADE YOGURT**

Prepare a recipe of homemade yogurt according to the recipe below. You must follow directions very carefully!

Microwave temperature probe or thermometer

2-1/2 cups nonfat dry milk powder

3-1/2 cups water

1/3 cup plain yogurt

Desired fruit

Makes 4 cups

Place dry milk in 2-qt. casserole. Slowly stir in water until dry milk dissolves. Microwave at HIGH 8-12 min. or until the temperature reaches 190 degrees, stirring twice. Let the mixture cool to 115 degrees. Stir a small amount of hot mixture into the yogurt. Return to the milk, stirring constantly. Cover with plastic wrap.

Insert a microwave thermometer through the plastic so it rests in the center of the milk mixture. Check the temperature periodically. Reduce power to 30% (Medium Low). When the temperature falls below 110 degrees; microwave 30 seconds at a time until the temperature reaches 115 degrees again.

Allow the mixture to stand in the oven undisturbed 3 to 4 hours, checking the temperature every 30 minutes. Every time the temperature falls below 110 degrees, microwave until it comes up to 115 degrees. The mixture will appear set. Transfer it to the refrigerator to chill. Add fruit. Store in the refrigerator no longer than 2 weeks.

ANSWER THE FOLLOWING QUESTIONS:

1. How does your homemade yogurt compare to the purchased product?
2. Compare the price of homemade yogurt to the purchased variety.

COSTS:

HOMEMADE COST

MILK =

NATURAL YOGURT =

PURCHASED COST =

Student's Signature \_\_\_\_\_

Comments: \_\_\_\_\_

Parent's Signature: \_\_\_\_\_

Comments: \_\_\_\_\_

Name \_\_\_\_\_

Class \_\_\_\_\_

**LEARNING ABOUT LOUIS PASTEUR**

**DIRECTIONS:** Write a TWO-PAGE report on Louis Pasteur. Use at least three different sources. Include the following information:

**REFERENCES:** (Must have at least three)  
Book, Author, Date Edited, Page numbers

**SHORT BIOGRAPHY:** (1/2 Page)  
Place and date of birth.  
Place and date of death.  
Early childhood experiences.  
Education.

**CONTRIBUTIONS:** (1 Page)

List at least THREE important contributions Louis Pasteur made to mankind.

**DAIRY:** (1/2 Page)

What did Louis Pasteur do to improve the quality of dairy products?

Name \_\_\_\_\_

Class \_\_\_\_\_

**THREE FACES OF DAIRY PRODUCTS**

**DIRECTIONS:** Select three recipes to make at home. You must clean up the kitchen after finishing each recipe.

**RECIPE #1--**Must contain at least one cup of milk.  
Write the complete recipe here:

Parent's Signature: \_\_\_\_\_

Comments: \_\_\_\_\_

**RECIPE #2--**Must contain at least one cup of cheese.  
Write the complete recipe here:

Parent's Signature: \_\_\_\_\_

Comments: \_\_\_\_\_

**RECIPE #3--**Must be a recipe with a basic cream white sauce base.  
Write the complete recipe here:

Parent's Signature: \_\_\_\_\_

Comments: \_\_\_\_\_

## DAIRY GROUP RECIPES

### CHEESY ENCHILADAS

|                                  |                            |
|----------------------------------|----------------------------|
| 1/2 cup cottage cheese           | 1/2 tsp. chili powder      |
| 1/2 cup Monterey Jack cheese     | 1/2 tsp. onion salt        |
| 1/2 cup Cheddar cheese           | 2 flour tortillas (10 in.) |
| 1 Tbsp. chopped mild green chili | 1/2 cup salsa              |
| 1 egg, beaten                    | 2 Tbsp. sour cream         |
| 1/3 cup refried beans            |                            |

Grease a glass 2-quart casserole dish. Grate the Monterey Jack and Cheddar cheeses. **SAVE THE CHEDDAR CHEESE FOR A TOPPING.** Mix together cottage and Monterey Jack cheeses, chopped green chili, egg, seasonings. Spread tortillas with a layer of refried beans. Place half the filling on each tortilla. Spread with half of the salsa. Roll tortilla up and place seam side down in the dish. Cover with other half of salsa. Microwave HIGH 5 min. until hot. Sprinkle with the Cheddar cheese. Microwave HIGH for 1-2 minutes more just until cheese is melted. Garnish with sour cream.

### CREPES

|          |               |
|----------|---------------|
| 3 eggs   | 1/2 cup flour |
| cup milk | 1/2 tsp. salt |

Beat eggs until foamy. Mix in milk, flour and salt. Melt 1 tsp. shortening in frying pan. Use about 1/3 cup batter for a 10-inch frying pan and tilt pan until batter covers the bottom. Brown crepe on both sides. Remove from pan and sprinkle with cinnamon-sugar and roll up. Serve with syrup. You may use any filling for this basic recipe.

### CHOCOLATE MOUSSE

|                               |                |
|-------------------------------|----------------|
| 3 eggs, separated             | 1/4 tsp. salt  |
| 1 cup milk                    | 3 Tbsp. cocoa  |
| 1 envelope unflavored gelatin | 1 tsp. vanilla |

Separate eggs. In a saucepan, stir together milk, egg yolks, gelatin and salt. Add cocoa. Heat on medium heat and mix with a whisk until mousse is boiling. Boil for one minute. Use a whisk to stir constantly. Remove from heat. Stir in vanilla. Refrigerate.

|                        |                           |
|------------------------|---------------------------|
| 3 egg whites           | Prepared Chocolate Mousse |
| 1/3 cup whipping cream | 2 tsp. sugar              |

Beat the egg whites until stiff peaks form. Clean the beaters well. Beat whipping cream in another bowl until thick. Add 2 tsp. sugar and mix in well with a spoon. Reserve 2 Tablespoons of the cream to use as a garnish. Beat chilled mousse in a large bowl until smooth. Add the whipped cream and beat until smooth and creamy. Fold in the egg whites with a rubber scraper. Spoon into bowls and garnish with extra whipping cream. Enjoy!!

### CHEESE FONDUE

|                        |                      |
|------------------------|----------------------|
| 1/2 cup Cheddar cheese | 1 Tbsp. flour        |
| 2 slices French Bread  | 1/2 tsp. dry mustard |
| 1 Tbsp. margarine      | 1/2 cup milk         |

Grate cheese on wax paper. Cube bread. Heat margarine in saucepan over low heat until melted. Stir in flour and dry mustard with wire whisk. Remove from heat. Stir in milk. Return to heat and bring mixture to boiling, stirring constantly on medium heat. Reduce heat to low. Boil sauce while stirring one more min. Stir in grated cheese until melted. Do not OVERHEAT. Spear bread cubes with a fork and dip in fondue.

### HOMEMADE VANILLA ICE CREAM

|                        |                         |
|------------------------|-------------------------|
| 1-1/2 qts. heavy cream | 1 Tbsp. pure vanilla    |
| 3 cups sugar           | 1/2 tsp. salt           |
| 1 can evaporated milk  | About 2 qts. whole milk |

Mix all ingredients together well, except milk in electric mixer. Fill ice cream container with this mixture. Add enough whole milk to come within four inches of top. Makes about 4 quarts

#### FROZEN STRAWBERRY YOGURT

|                                 |                     |
|---------------------------------|---------------------|
| 10 oz. pkg. frozen strawberries | 1/2 tsp. salt       |
| 3 oz. strawberry Jello          | 1 cup Half and Half |
| 32 oz. plain or vanilla yogurt  | 2 tsp. vanilla      |

Drain strawberries. Place drained liquid in saucepan and heat to boiling. Add Jello and stir until dissolved. Mix strawberries, yogurt and gelatin mixture in a blender until smooth. Add these and remaining ingredients to an ice cream freezer. Freeze mixture until firm. Makes 3 quarts.

#### MACARONI AND CHEESE

|                   |                       |
|-------------------|-----------------------|
| 2 Tbsp. margarine | 1/2 cup grated cheese |
| 2 Tbsp. flour     | 1/2 tsp. salt         |
| 1 cup milk        | 1 cup macaroni        |

Melt margarine in saucepan. Mix in flour until smooth. Stir in milk and continue stirring until sauce is smooth, well-blended and thickened. Add 1/2 cup grated cheese and continue stirring until melted.

Fill another saucepan 2/3 full of water. Bring to a boil. Add salt and oil. Add the macaroni. Stir. Let mixture boil about seven minutes until just tender. Drain and add to sauce; mix well.

#### CHERRY CHEESECAKE

|                        |                        |
|------------------------|------------------------|
| 8 oz. cream cheese     | 1 tsp. lemon juice     |
| 2 cups whipped topping | 1/4 cup powdered sugar |

#### GRAHAM CRACKER CRUST

10 graham crackers  
1/4 cup melted margarine  
1 Tbsp. sugar

#### TOPPING

2 cans fruit pie filling

Crush graham crackers. Mix crumbs, margarine and sugar together. Press firmly in bottom of cupcake papers or 9 X 12 cake pan. Bake 5 min. in 350 degrees oven. Cool crust before adding filling.

Cream together softened cream cheese and whipped topping. Add lemon juice and powdered sugar and mix with electric mixer until smooth and creamy. Spread cream cheese mixture over the cooled graham cracker crust. Spoon pie filling over top of cream cheese mixture. Makes 16 individual servings or 9 X 12 cake pan