

An Introduction to Nutrition for Lower Elementary School Student

An Honors Thesis (HONRS 499)

by

Glenda K. Gentry

Thesis Advisor

Mrs. Corine Carr

Corine M. Carr, R.D.

Ball State University

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Purpose of Creative Project:

Despite advances in clinical and preventive medicine, children today are at significant health and nutritional risk. Although most children in the United States are well-nourished, malnutrition is not entirely uncommon in our population. The most common nutrition-related problems occurring among American children today include obesity, iron-deficiency anemia, dental caries, and high blood cholesterol levels (1).

Because good nutrition is important to good health, it is imperative that children today know how to choose healthy eating patterns. Oftentimes, school children are left to choose or even prepare their own breakfasts, lunch boxes, and after school snacks (1). Therefore, it is up to teachers and other educators to give these children the tools they need to provide themselves with appropriate, balanced, nutrition.

This educational packet is designed to assist teachers of kindergarten to second grade children in introducing the principles of nutrition.

There are four lessons included, each with a related nutrition activity. Ideally, one lesson will be given per week for four weeks. If used during the month of March, it could be tied in with activities related to National Nutrition Month.

References

1. Boyle MA, Morris DH. *Community Nutrition in Action: An Entrepreneurial Approach*; St. Paul, MN: West Publishing Company; 1994.

Where We Get Our Food

Objectives:

The students will be able to match various foods with their sources using food game cards.

Materials:

* Food Origins Memory Game Cards

Background/Motivation:

Many children have no idea where the foods they eat come from or what they look like in their original form. This activity can be helpful in introducing children to the idea that foods come from many different sources.

What to do:

1. Introduce the topic by holding up one of the food cards and asking, "Does anyone know where _____ come from? Do they come from an animal or a plant? Do they grow on trees or underground? Continue with the rest of the food cards asking similar questions.
2. Start over with the first food card showing its origin card along with it, explaining how the food got from its origin to its present form.
3. Divide the class into groups of four or five students. Give each group a set of Food Origins Memory Game Cards. Use the following instructions for playing the game. Most children will know how to play a memory game, but you may want to read the instructions for clarification.

How to play Food Origins Memory Game

1. Shuffle the game cards and place them upside-down on the floor or on a table. Arrange the cards into five rows of eight cards each.
2. The first player begins by turning two cards face up. If the two cards are a match (in this game, a match is a food and its origin), the player picks the cards up and places them in front of themselves. This player then continues until no more matches are found. If there is not a match, the cards are turned face down and the next player proceeds.
3. The player with the most pairs when all the cards are taken wins the game.

Additional Notes:

1. This lesson can be given in the beginning of the week so the game can be played one or two more times during the week. This will reinforce what they have learned.
2. Try to integrate nutrition into other school subjects during the week. For example, use foods for learning addition and subtraction or colors.
3. During lunch or snack time, ask the children if they know where the foods on their tray came from.
4. Plant a small classroom garden and grow vegetables from seeds. Keep the children involved in the care of the plants.
5. Make arrangements to visit a farm or supermarket, or have a farmer or grocer come and speak to the class.

Using the Food Guide Pyramid

Objectives:

The students will be able to:

1. Identify the different groups of the Food Guide Pyramid.
2. Reconstruct the Food Guide Pyramid using felt board pyramid and felt food models.
3. Identify the recommended number of servings for each group.

Materials:

- * Food Guide Pyramid felt board
- * Felt food models
(patterns and instructions included)

Background/Motivation:

The Daily Food Guide Pyramid is a pictorial presentation developed by the United States Department of Agriculture to illustrate the number of servings a person should have from each food group. The pyramid is an easy tool for children to understand. Children, ages 5-9, should have at least the lower number of servings but in smaller amounts.

What to do:

1. Begin with the felt board Food Guide Pyramid assembled with all food models and number pieces in correct sections. Start by asking the children how many of them have ever seen the Food Guide Pyramid. This will give idea how familiar the group is with the Pyramid.
2. Explain to the class that the Food Guide Pyramid is used to show how many servings they need from each food group every day.
3. Start at the bottom with the bread, cereals and other grain products group working your way up to the fats, oils, and sweets. Emphasize that the largest area is dedicated to the bread group where the smallest area to the fats and sweets.
Use the attached sheets as a guide to introducing the food groups.
4. Remove all of the food models and number pieces so you have a blank food pyramid.
5. Now tell the class that they are going to put the Food Guide Pyramid back together. Start by asking who knows what group belongs in the big space at the base of the pyramid.

If a student knows that the bread and cereal group belongs there, the child puts the bread slice on the pyramid in the correct section.

Then ask who knows how many servings it is recommended that we eat from this group every day. The student answering correctly places the "6-11" number piece in the bread and cereal section.

Have students name foods in the bread and cereal group allowing a different student to place each food on the pyramid.

When the bread and cereal group is finished, continue in the same manner with each of the food groups until the pyramid is complete.

Additional notes:

Keep the Food Pyramid in the corner of the room so it is accessible during play time.

The Daily Food Guide Pyramid

Breads, Cereals, and Other Grain Products

These foods have complex carbohydrates which give us lots of energy. They also give us essential vitamins, minerals and fiber.

6-11 servings per day

serving = 1 slice bread, 1/2 cup cooked cereal, rice or pasta; 1 ounce ready-to-eat cereal; 1/2 bun, bagel, or English muffin; 1 small roll, biscuit, or muffin; 3 to 4 small, or 2 large crackers.

* Whole grains (wheat, oats, barley), enriched breads, rolls, tortillas, cereal, bagels, rice, pastas (spaghetti, macaroni), popcorn, biscuits, muffins, crackers, and pancakes.

Vegetables

These foods have no fat or cholesterol. They give us important vitamins, like vitamin A and vitamin C.

3-5 servings per day

serving = 1/2 cup cooked or raw vegetables; 1 cup leafy raw vegetables; 1/2 cup cooked legumes; 3/4 cup vegetable juice.

* Broccoli, brussels sprouts, cabbage, carrots, cauliflower, cucumbers, green beans, peas, spinach, lettuce, tomatoes, sweet peppers, corn, potatoes, and beans.

Fruits

These foods are good sources of vitamin A, vitamin C, potassium, and fiber. They are also good because they don't have any salt, fat, or cholesterol.

2-4 servings per day

serving = 1 typical portion of fresh fruit (such as 1 apple, 1 orange, 1/2 grapefruit, 1 melon wedge); 3/4 cup juice; 1/2 cup berries; 1/2 diced, cooked, or canned fruit; 1/4 cup dried fruit.

* Apricots, cherries, grapefruit, oranges, orange juice, peaches, strawberries, apples, bananas, pears, and raisins.

Meat, Poultry, Fish, and Meat Alternatives

These foods are good sources of protein, which helps build muscle. They also give us iron, vitamin B12, and other nutrients.

2-3 servings per day

serving = 2 to 3 ounces lean, cooked meat, poultry, or fish (total 5 to 7 ounces per day); count 1 egg, 1/2 cup cooked legumes, or 2 tablespoons peanut butter as 1 ounce meat.

* Chicken, turkey, beef, eggs, pork, hot dogs, lunch meats, peanut butter, legumes (dried beans and peas), and fish.

Milk, Cheese, and Yogurt

These foods give us calcium, protein, vitamin D, and many other important nutrients.

2-3 servings per day

serving = 1 cup milk or yogurt; 2 ounces process cheese food; 1 1/2 ounces cheese.

* Milk, cheese, cottage cheese, yogurt, ice milk, frozen yogurt, sour cream, and cream cheese.

Fats, Sweets, and Oils

These foods do not give us many nutrients. They contain a lot of sugar, fat, and calories. We should try not to eat too many of these foods every day.

* Margarine, salad dressings, oils, mayonnaise, cream, cream cheese, butter, gravy, cake, pie, cookies, doughnuts, sweet rolls, candy, soft drinks, fruit drinks, jelly, syrup, gelatin, deserts, sugar, and honey.

Planning a Healthy Meal

Objective:

The students will be able to choose a well-balanced meal using pictures of foods from grocery advertisements.

Materials:

- * Felt food models and Food Guide Pyramid felt board
- * Plastic lunch box
- * Newspaper grocery ads and old magazines
- * Scissors, glue, and paper

Background/Motivation:

School children are often left with the responsibility of choosing what they will eat for themselves. Therefore, they need to know what a healthy meal consists of and how to plan one.

What to do:

1. Begin with the Food Guide Pyramid felt board completely assembled with food models in the correct areas. Review the Food Guide Pyramid briefly, if needed.
2. Tell the class that they are going to choose enough foods from the food pyramid for a whole day. Start with the bread group by choosing at least six foods. Continue with the other groups choosing at least the lower number of servings. As a food is chosen, place it in the lunch box.
3. Clear the remaining food models from the pyramid. Now put the foods from the lunch box back on the board to view what foods were selected.
4. Have the class choose a healthy lunch by picking foods from the various groups. Place them in the lunch box as each food is named. It is a good idea to do this three or four times to show a variety of food combinations.
5. Explain to the class that they can plan healthy meals for themselves. Give each child a blank sheet of paper or a paper plate.
6. Have each student decide what meal they would like to plan. Give each student a pair of scissors and some old newspaper grocery ads and magazines. Allow them to select and cut out pictures of foods they want to include in their meal.
7. Instruct the class to arrange their food pictures on their "plate." Check each student's plate and suggest changes BEFORE they glue them to their papers.

8. Show a few of these meals to the class to show them examples of other students' ideas of a meal.

Additional Notes:

At lunch or snack time, ask the students how they could make that meal more healthy. What would they add? What would they leave out?

Choosing Healthy Snacks

Objectives:

1. The students will be able to identify healthy snack ideas.
2. The students will be able to identify which food group each snack fits into.

Materials:

- * SNACK Bingo cards
- * SNACK Bingo caller cards
- * Color Crayons
- * Paper or plastic Bingo chips

Background/Motivation:

Snack food is a huge market and its main target is children. Children are enticed by colorful packaging, prizes, and cartoon characters, to try these often sugar and fat laden packaged snacks.

Introducing to children the idea that fresh fruits, vegetables, milk, and many other wholesome foods make fun and delicious snacks is a good start to preventing obesity and other health problems.

What to do:

1. Start by asking the class what kinds of snacks they like to eat. Write these snacks on the board.
2. Read a book such as, The Berestain Bears, and Too Much Junk Food, by Stan and Jan Berenstain or another book that talks about snacks and junk food.
3. Explain that most junk food, candy, and soft drinks are not very nourishing. For example: 1) instead of helping our bodies work better, they just pile up as extra fat 2) sugary foods can also cause dental caries which can mean more trips to the dentist.
4. Suggest healthy, good-tasting snacks such as apples, carrot sticks, nuts and frozen yogurt. Examples could be brought to the class or the class could prepare their own healthy snack.
5. Give each student a SNACK card and have them color all the pictures of foods.
6. Begin the game by choosing one of the caller cards and announcing it to the class. The students should place a bean over the square that has been called. This is just like BINGO except that each food may be found under any letter.
7. After each card is announced, for example, S-apple, explain why an apple is a healthy snack choice. Ask who knows which food group an apple fits into.

8. The first student to cover five squares in a row or in a diagonal should call out SNACK. Give a healthy food or non-food items, such as stickers, as prizes.

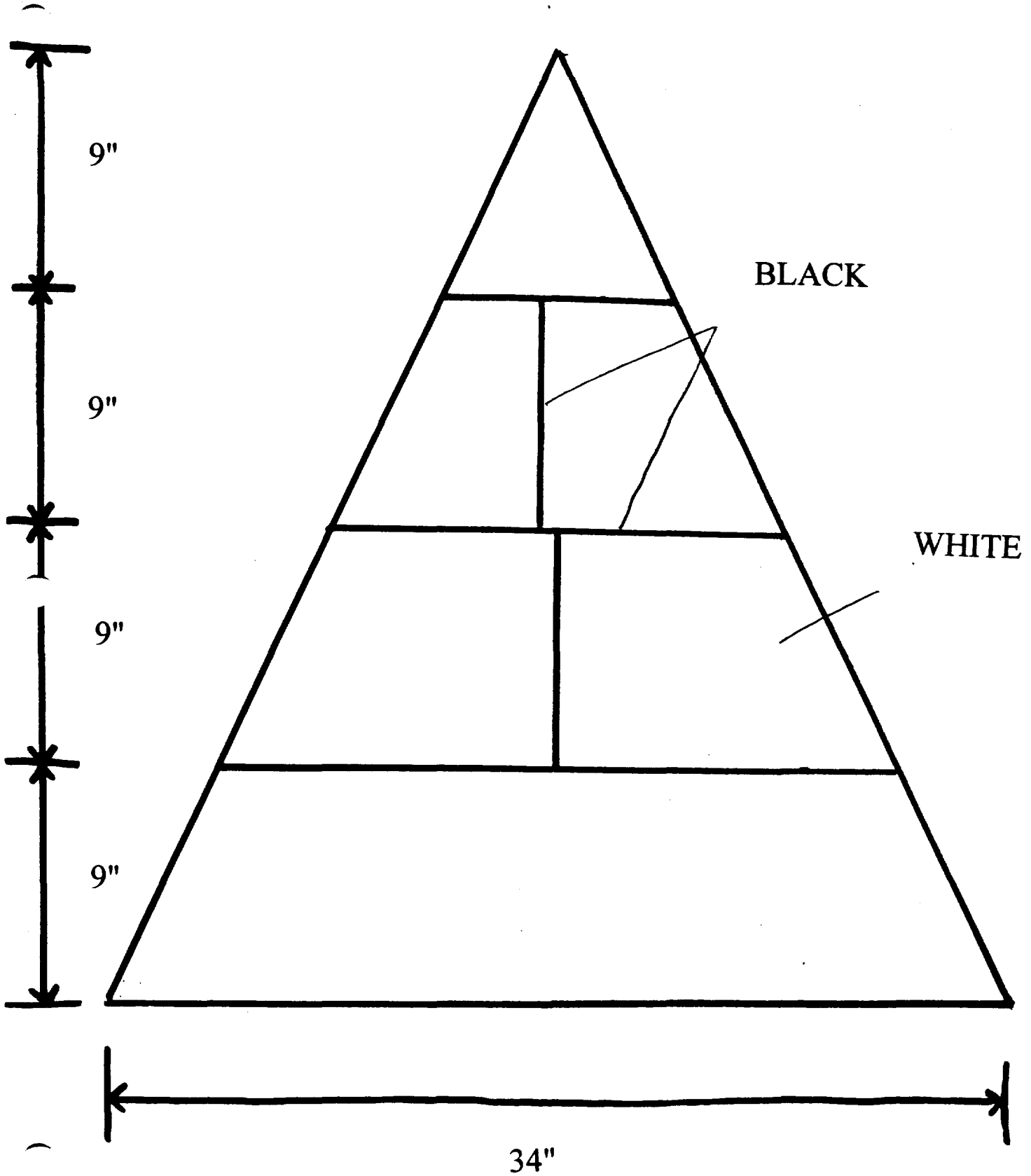
Additional notes:

Play the game as many times as desired. Test their knowledge further by requiring each winner to answer another nutrition question before receiving their prize.

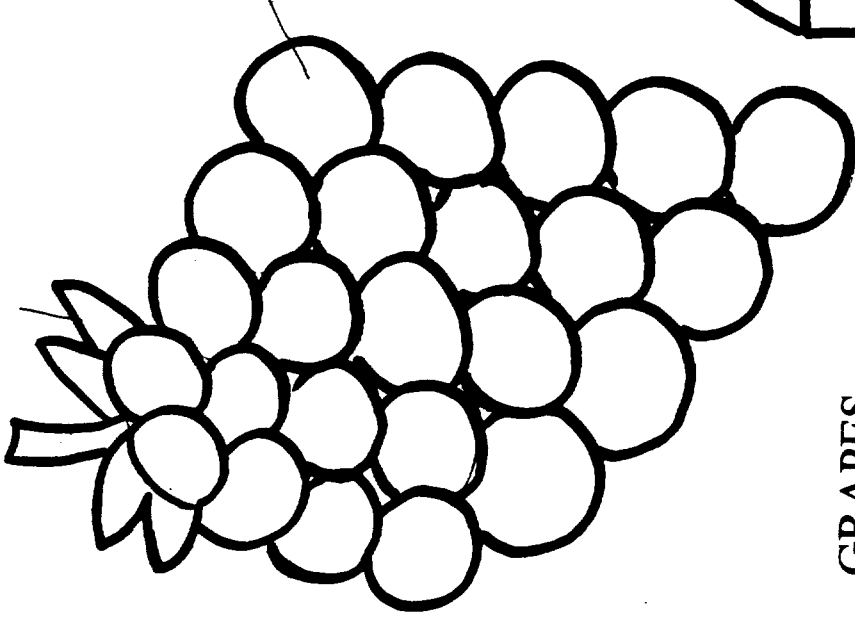
Instructions For Making Your Own Food Guide Pyramid Felt Board And Food Models

1. Cut a triangle from plywood that is 34" at the base and 36" high.
2. Cover the board with white felt, securing the edges in the back using a staple gun.
3. Cut 1/4" strips from black felt and cut into lengths needed to form dividers for the sections of the pyramid. Glue in place and trim edges. A hot glue gun works best.
4. Use food model patterns provided to cut pieces from colored felt. Layer pieces when more than one color is needed. Use black fabric paint for lettering and details.

FOOD GUIDE PYRAMID FELT BOARD



DK. GREEN

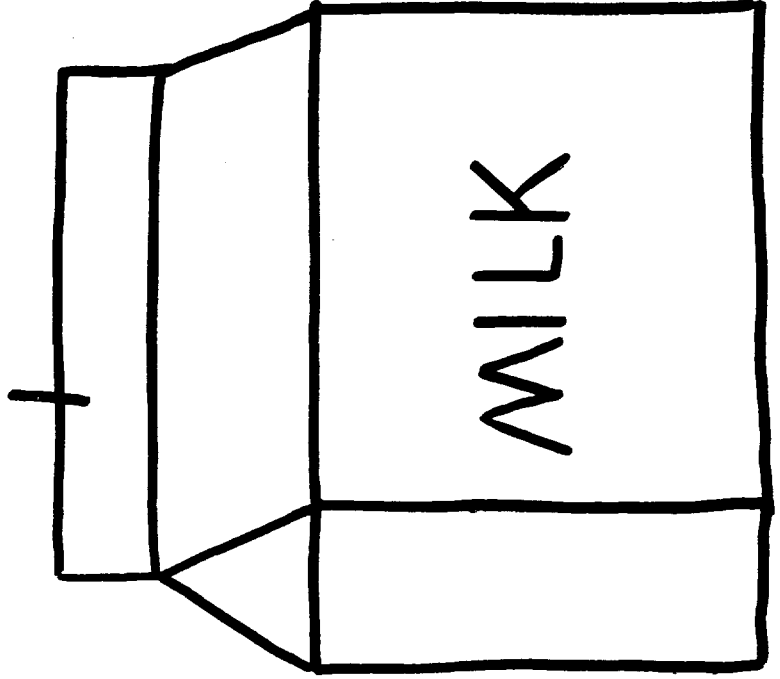


GRAPES

PURPLE

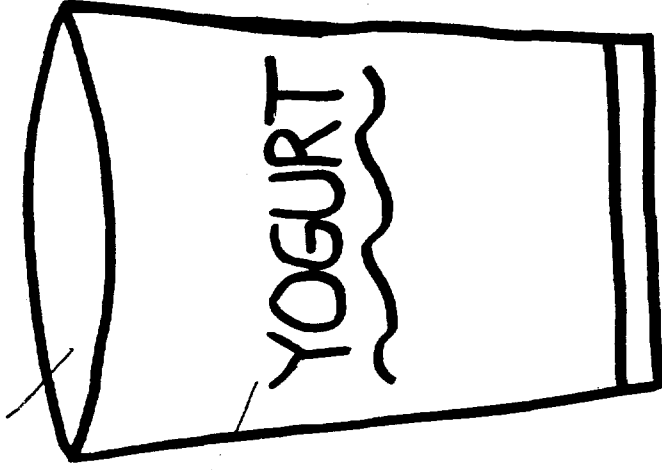
PURPLE

WHITE



MILK

WHITE

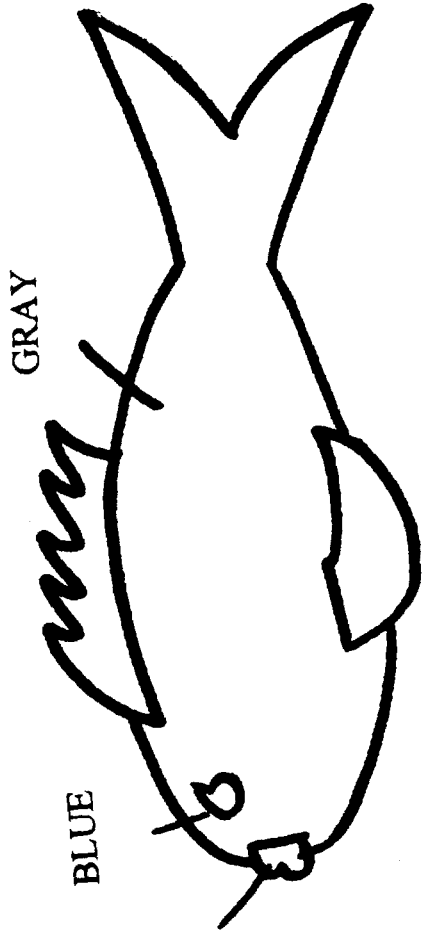


YOGURT

GRAY

BLUE

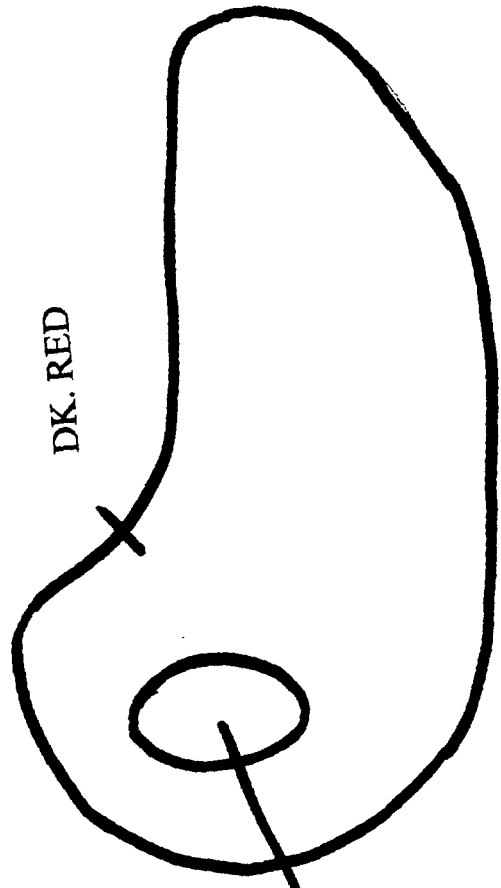
RED



FISH

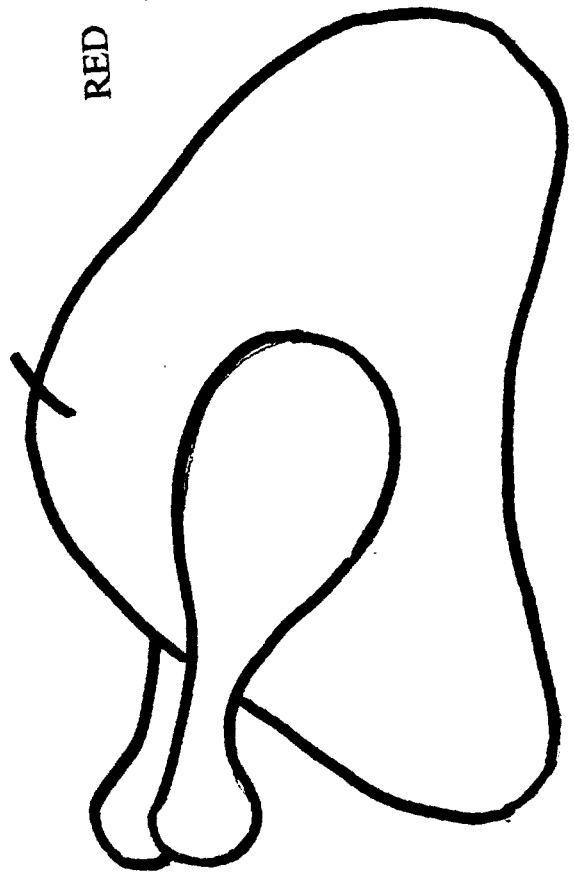
DK. RED

WHITE



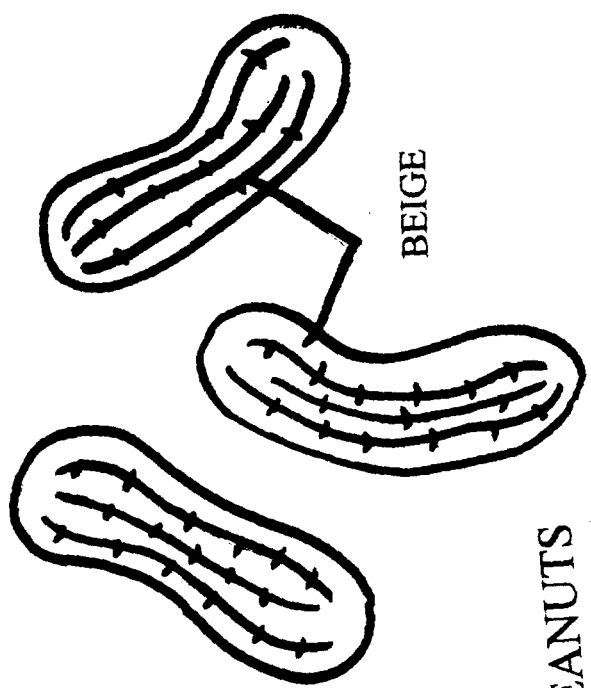
MEAT

BEIGE

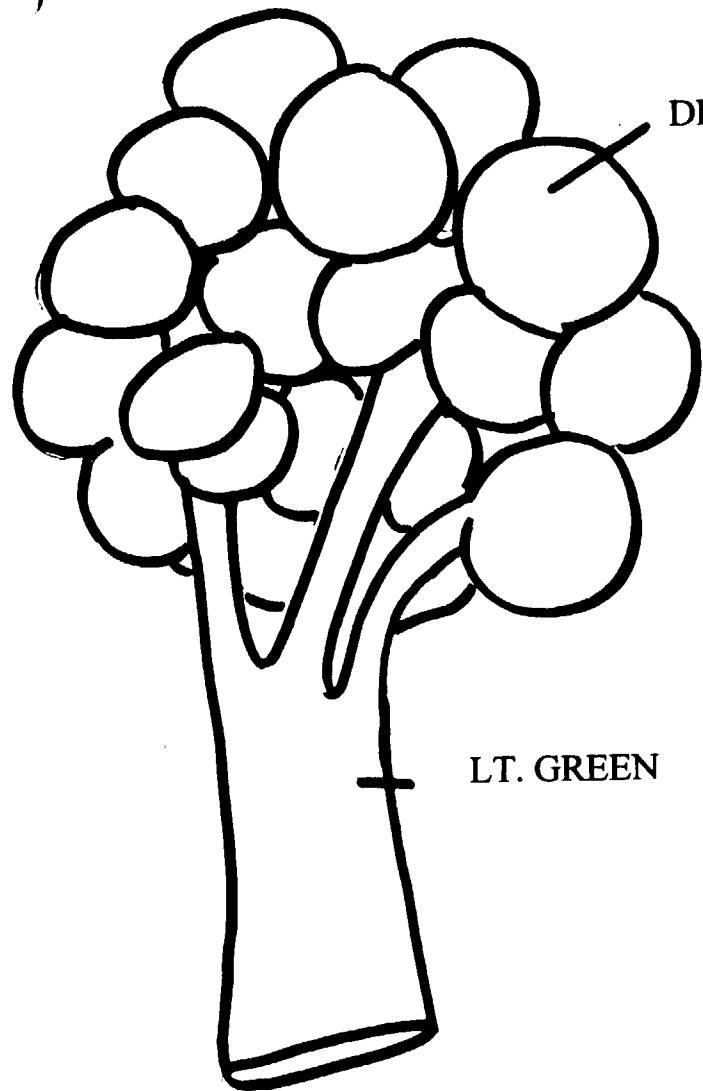


POULTRY

BEIGE



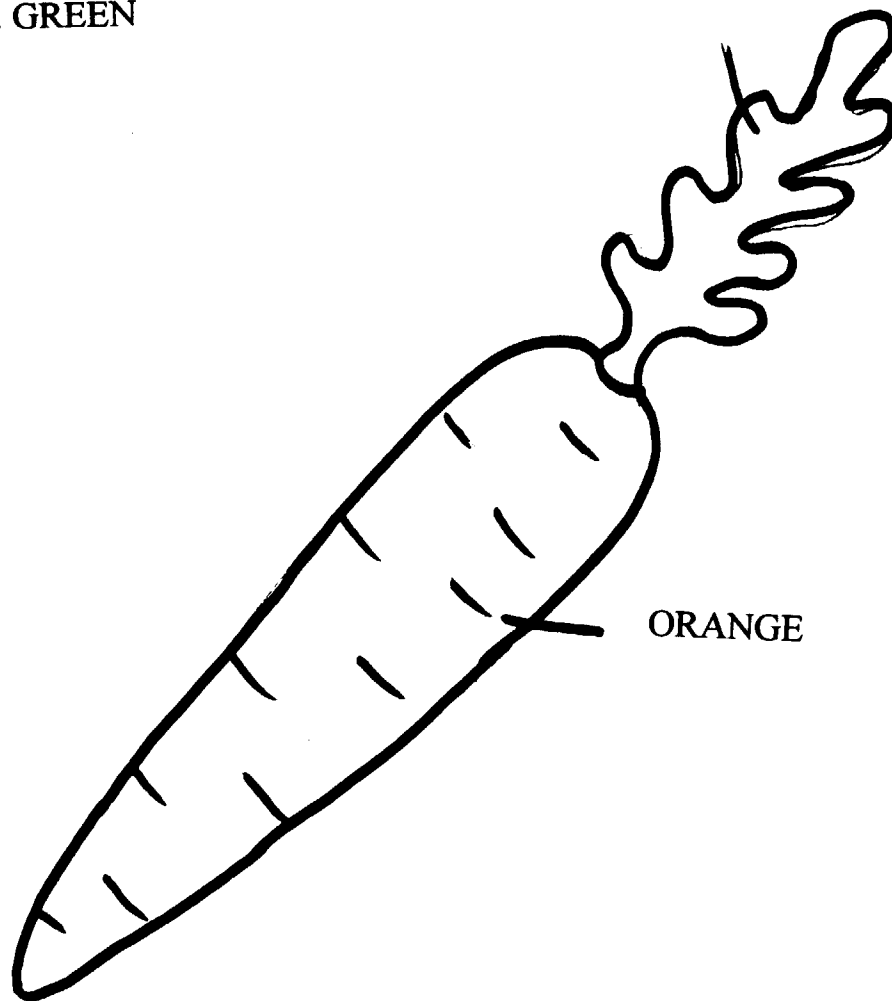
PEANUTS



DK. GREEN

LT. GREEN

BROCCOLI



LT. GREEN

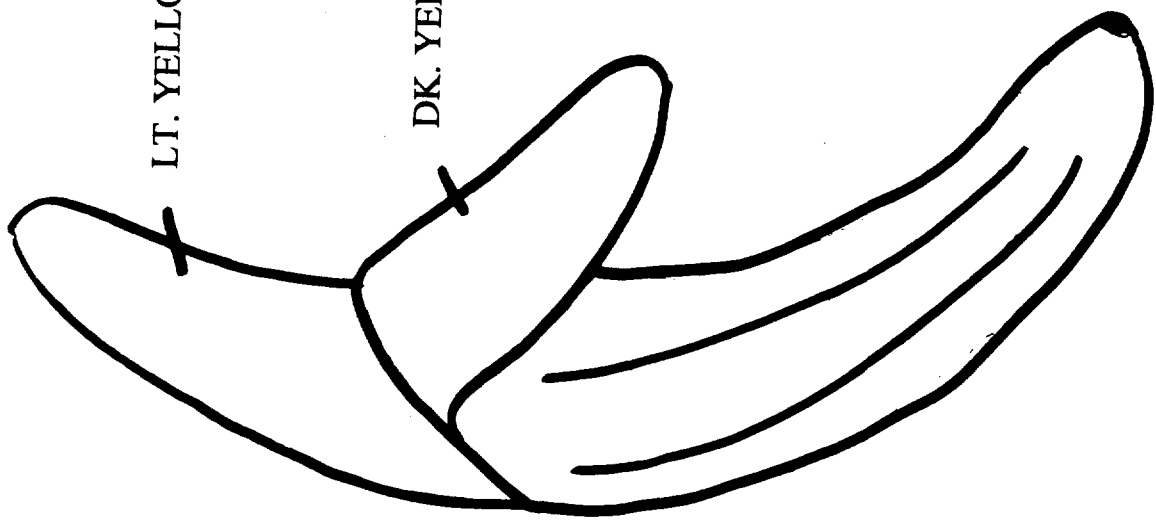
ORANGE

CARROT

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LT. YELLOW

DK. YELLOW



BANANA

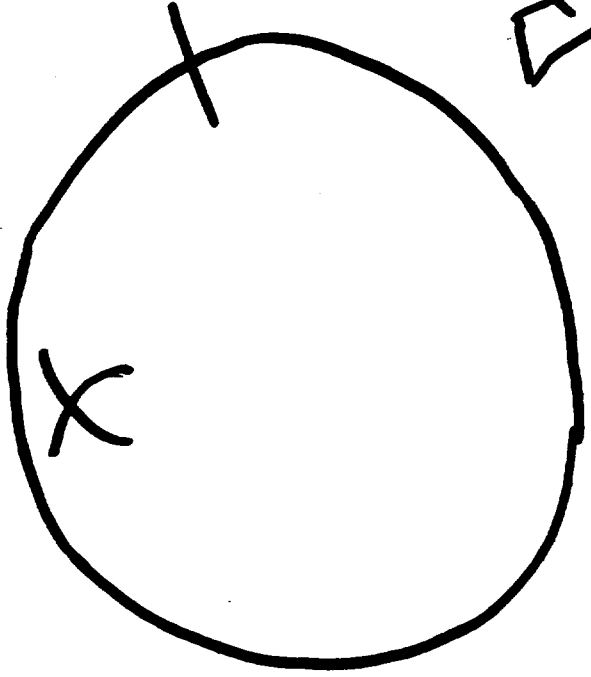
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ORANGE

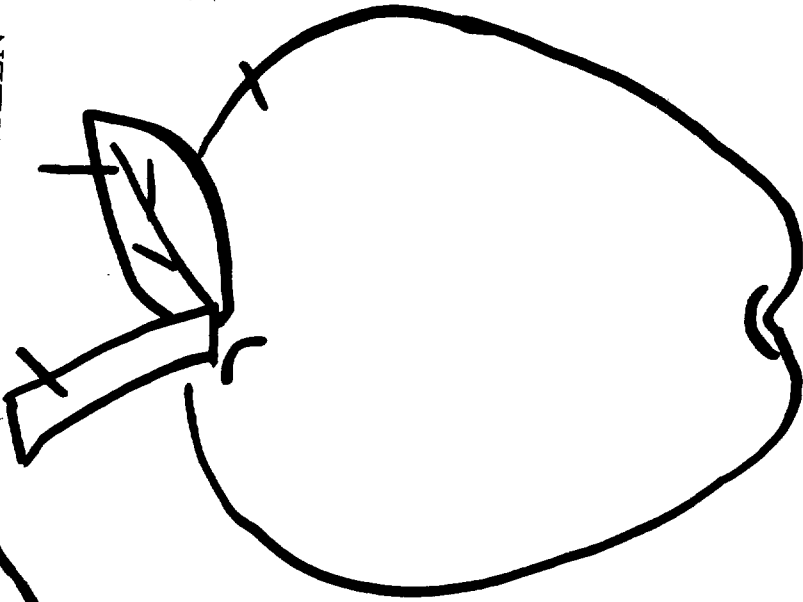
BROWN

DK. GREEN

RED

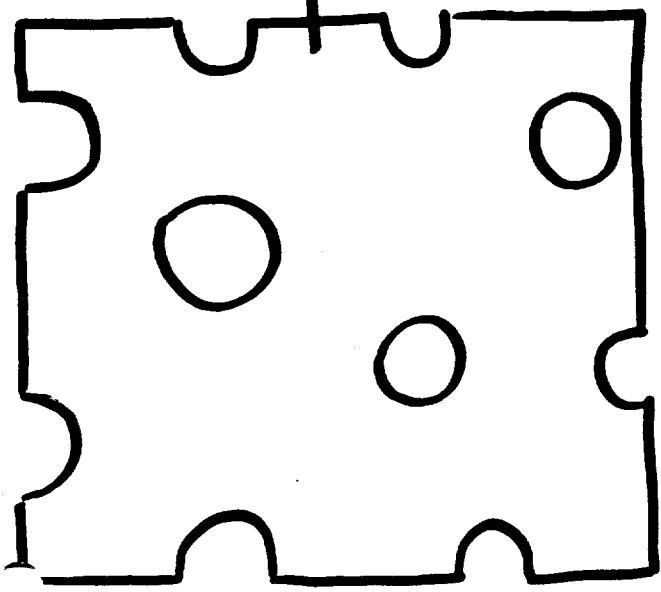


ORANGE



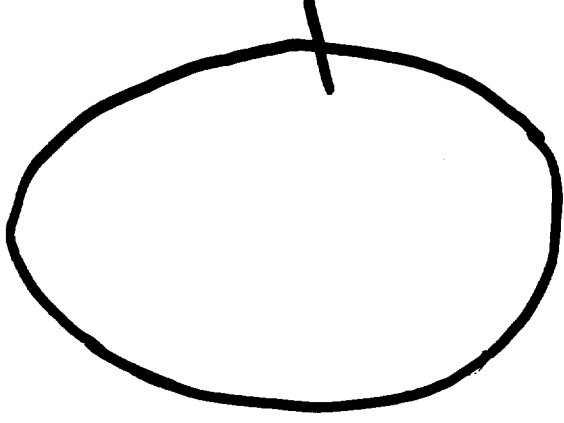
APPLE

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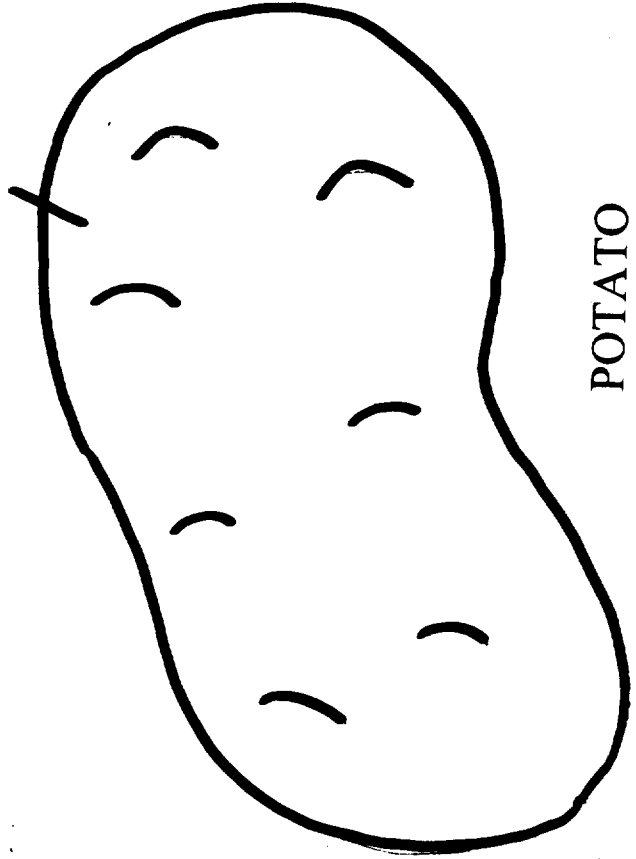
YELLOW

CHEESE

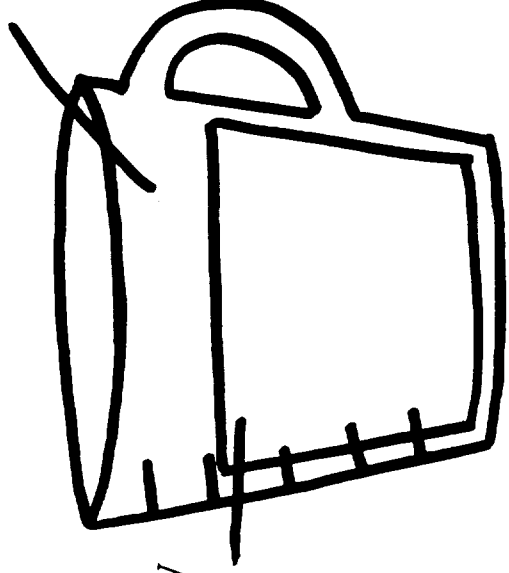


WHITE

EGG



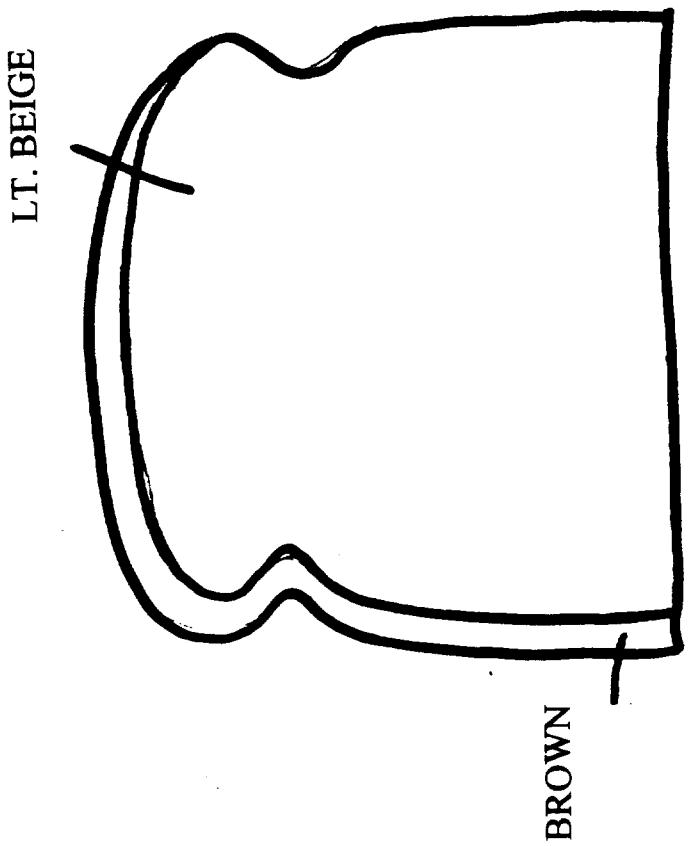
POTATO



YELLOW

OIL

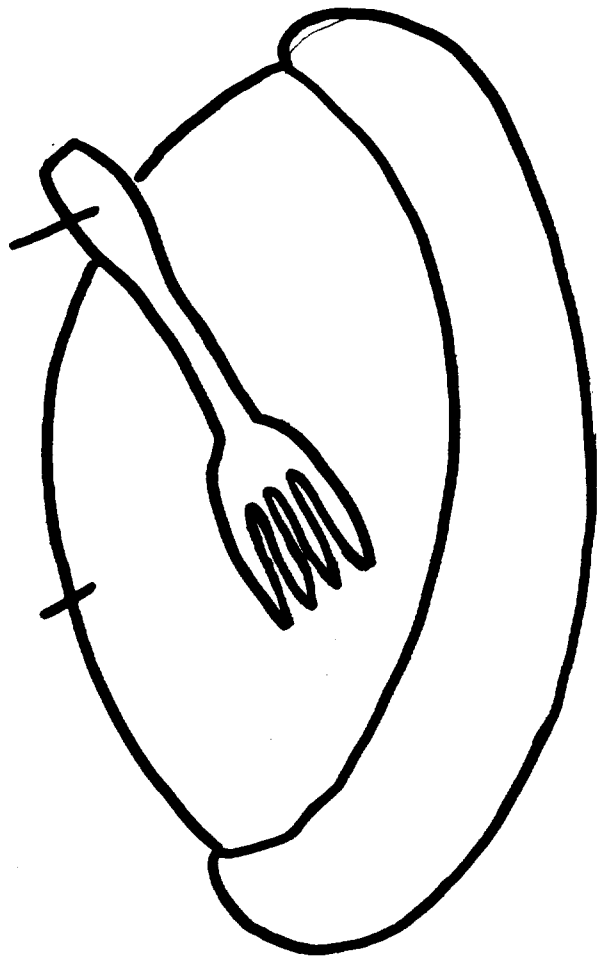
WHITE



LT. BEIGE

BROWN

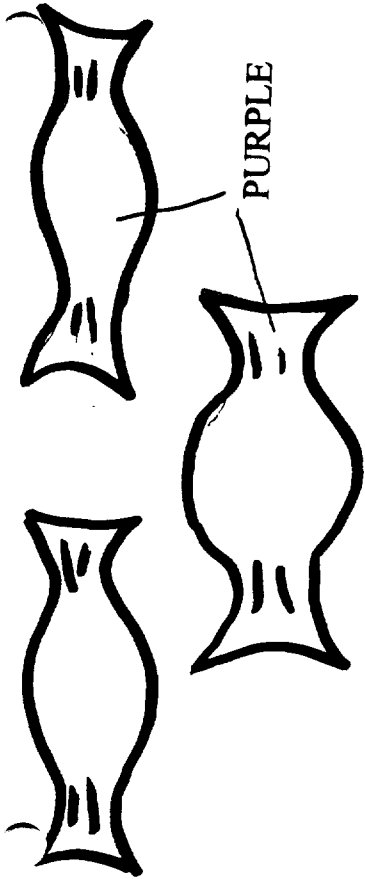
BREAD



LT. BEIGE

GRAY

SPAGHETTI

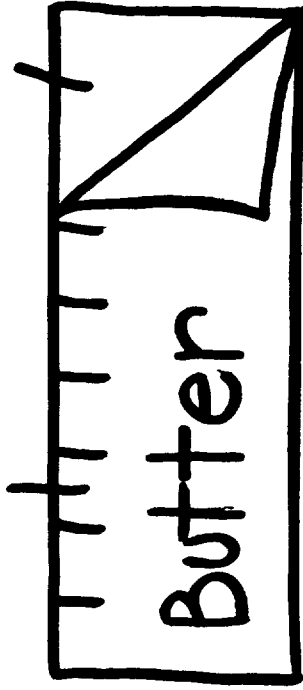


PURPLE

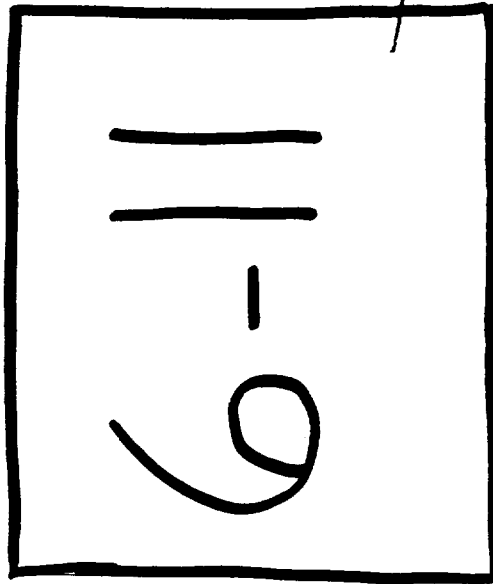
CANDY

WHITE

YELLOW

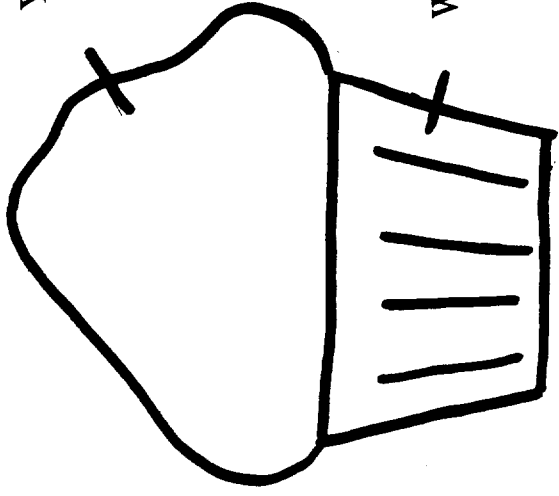


BUTTER



BLACK

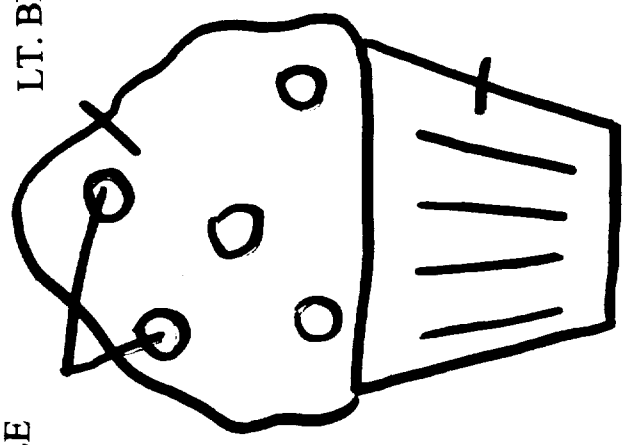
YELLOW



WHITE

CUPCAKE

LT. BEIGE

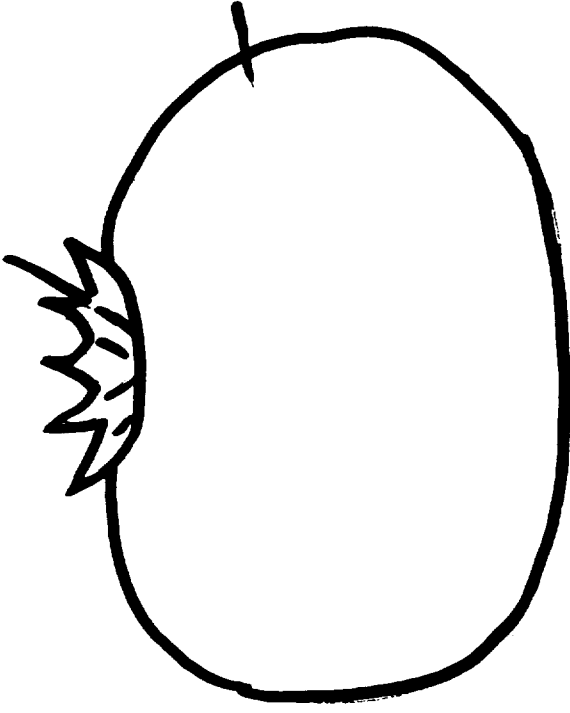


WHITE

PURPLE

MUFFIN

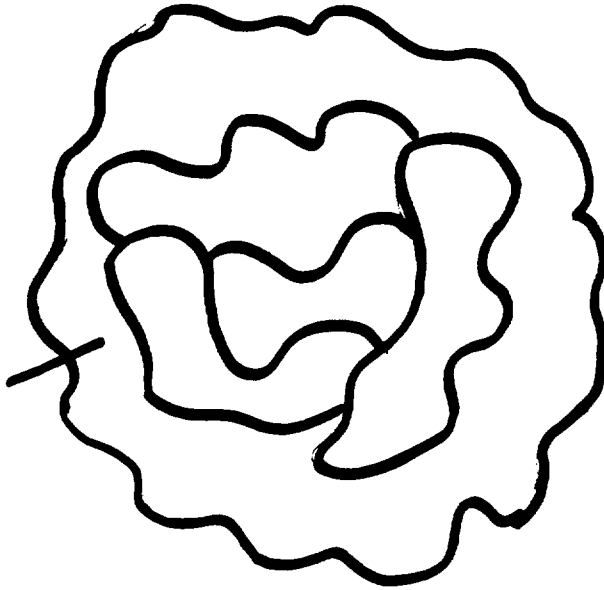
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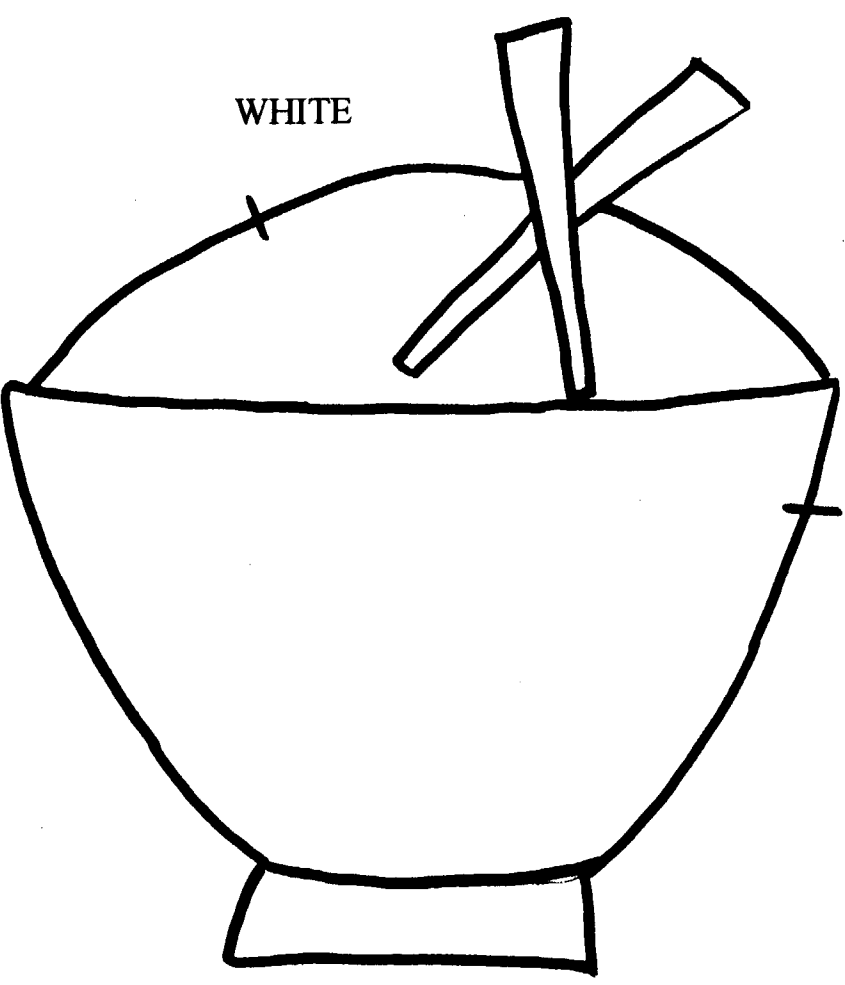
RED

TOMATO

LT. GREEN



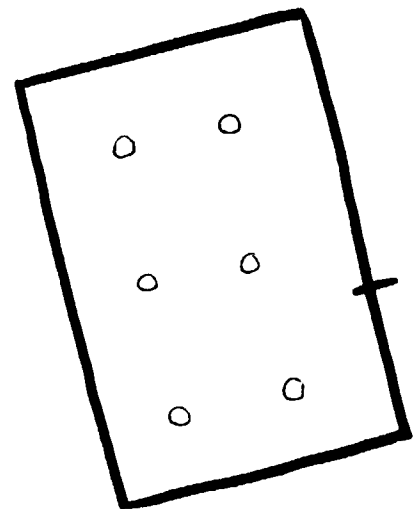
LETTUCE



WHITE

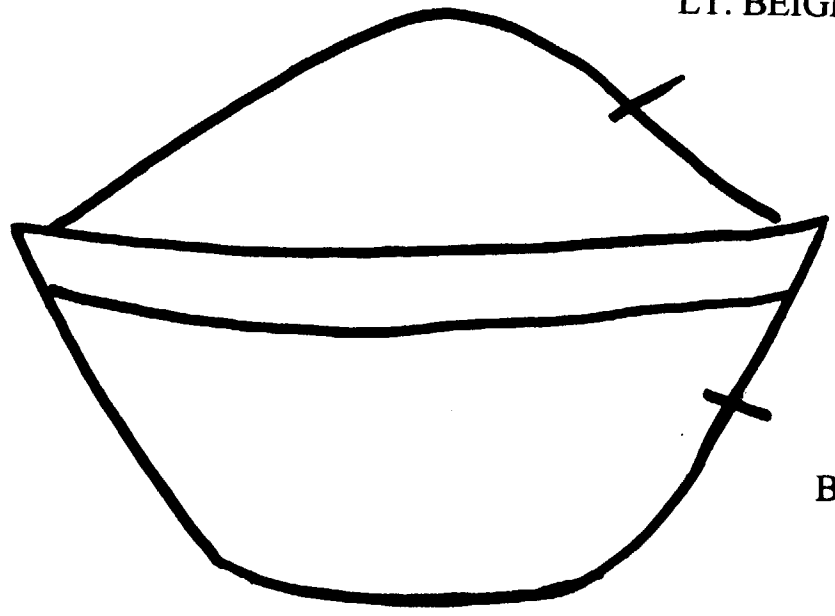
DARK BROWN

RICE



LT. BEIGE

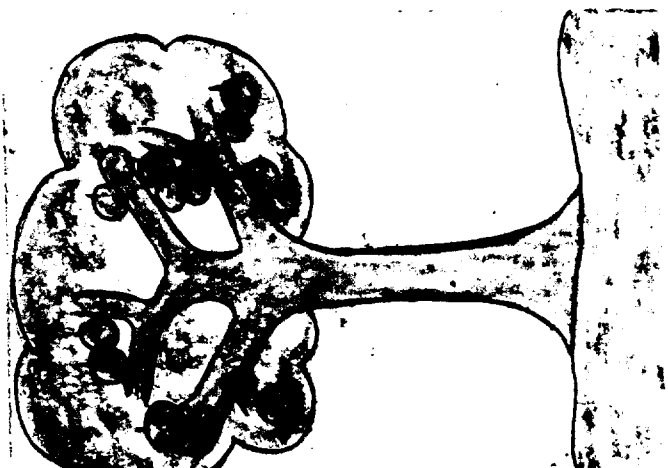
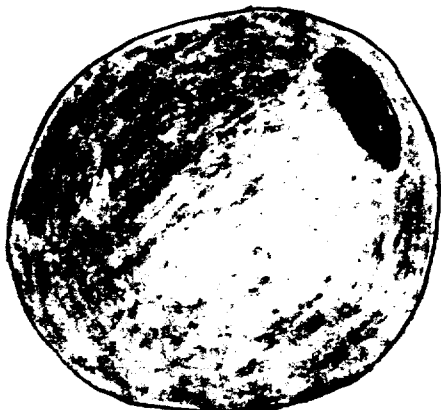
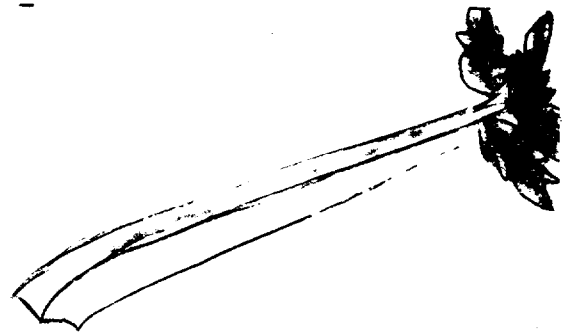
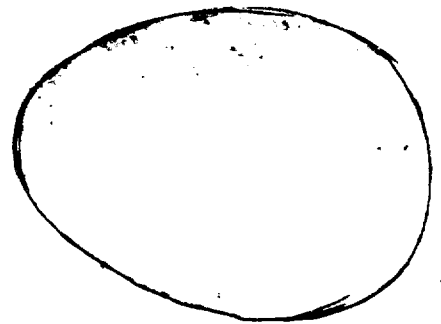
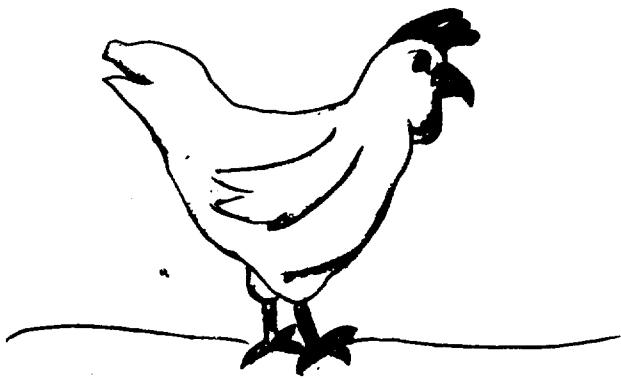
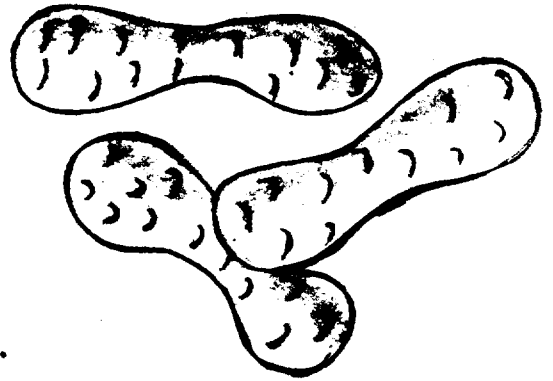
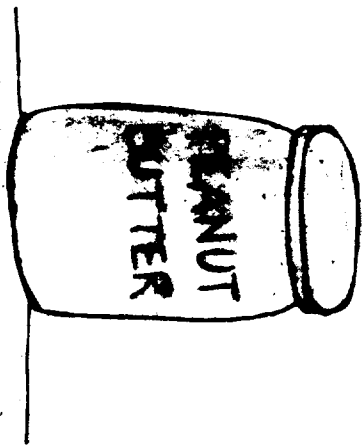
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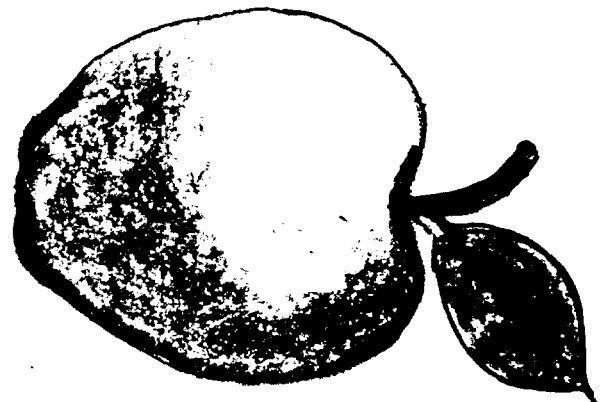
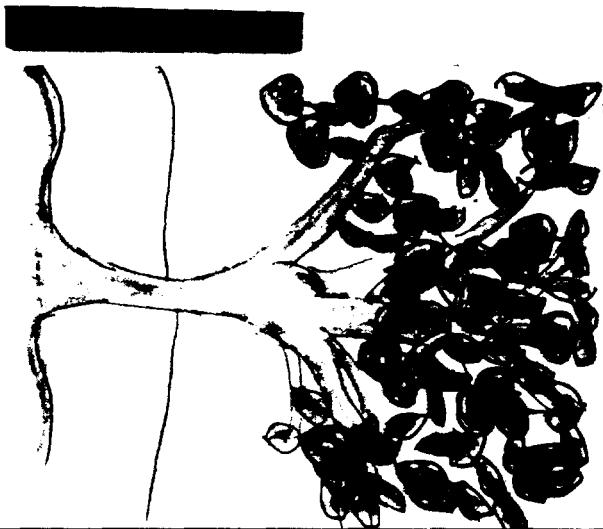
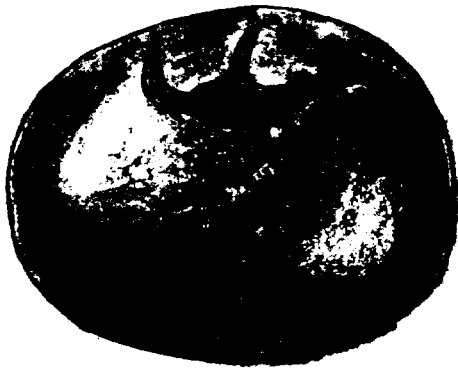
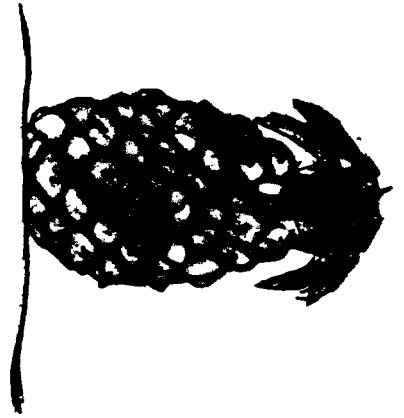
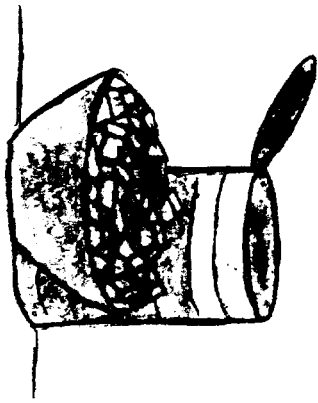
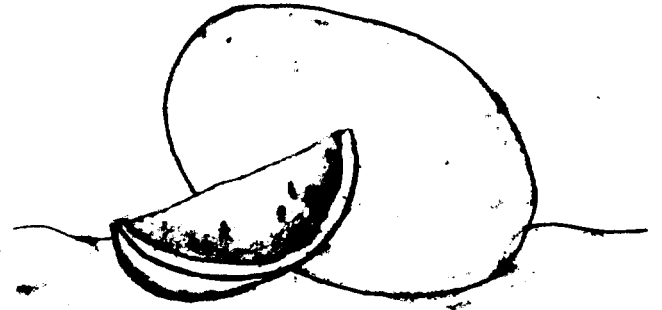
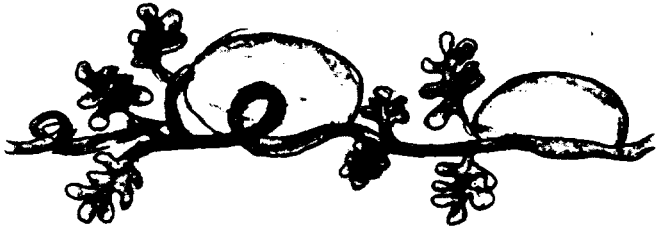


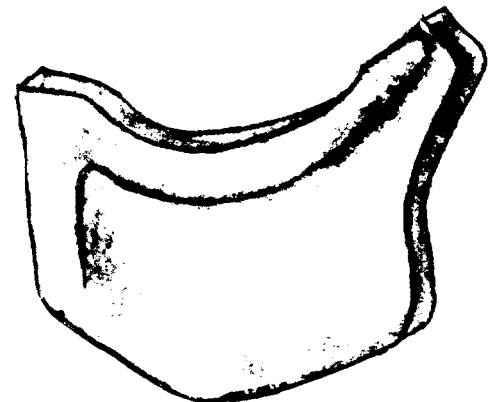
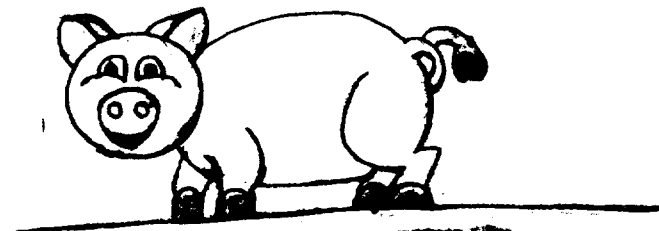
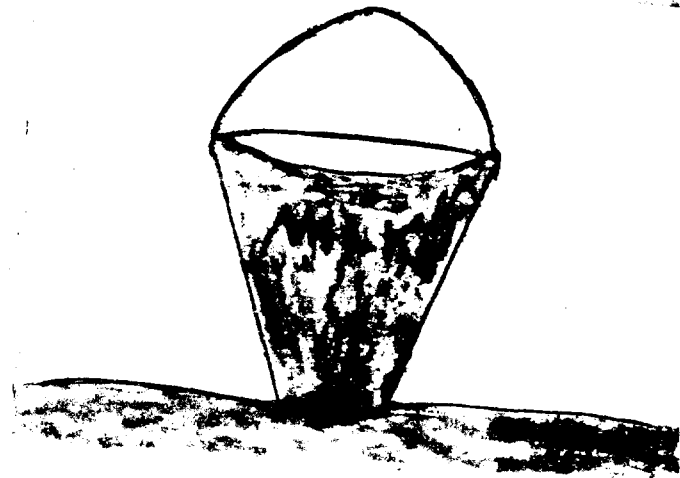
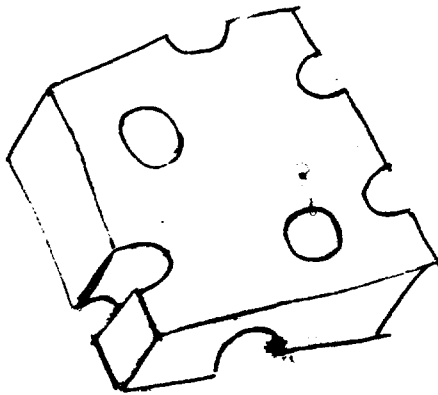
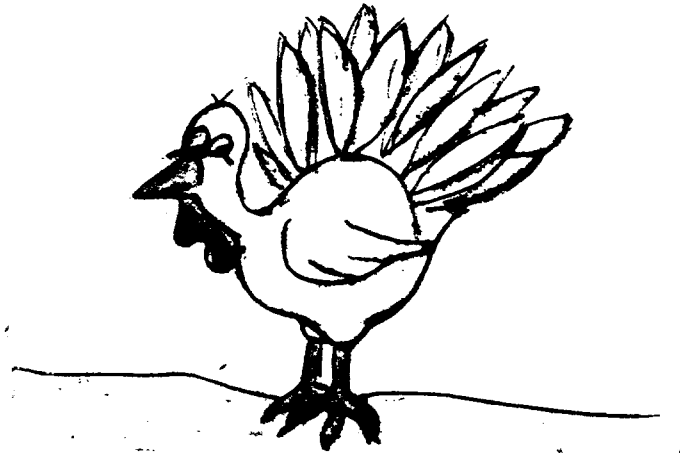
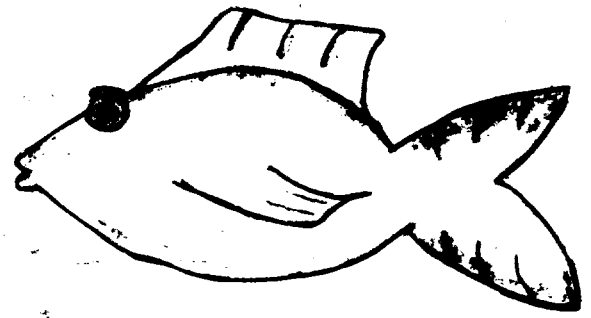
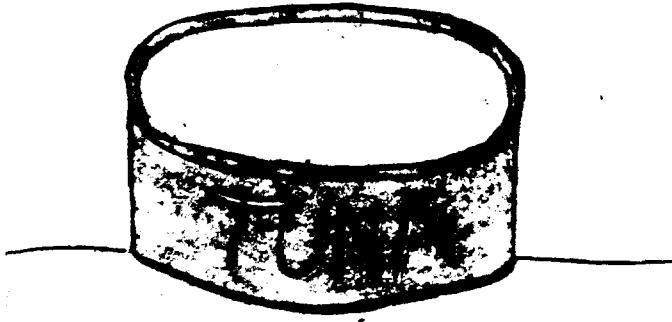
LT. BEIGE

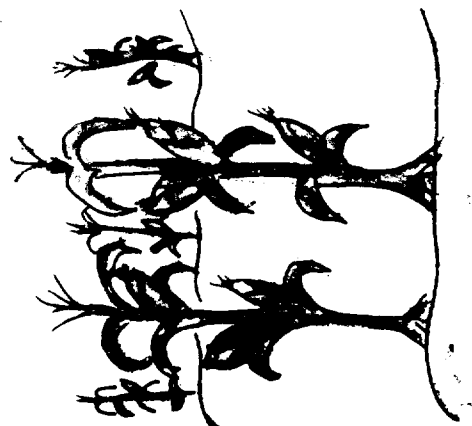
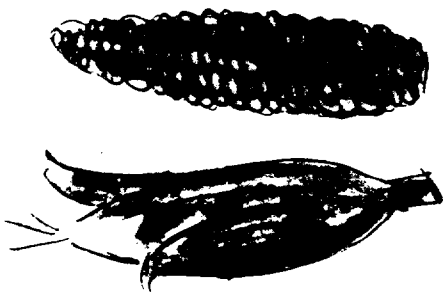
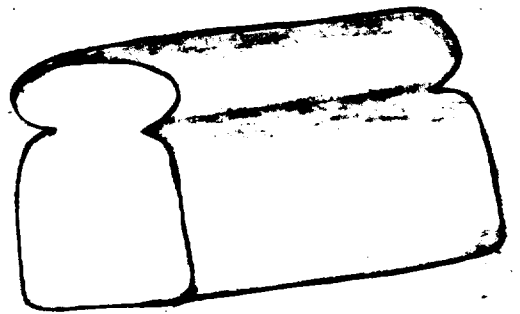
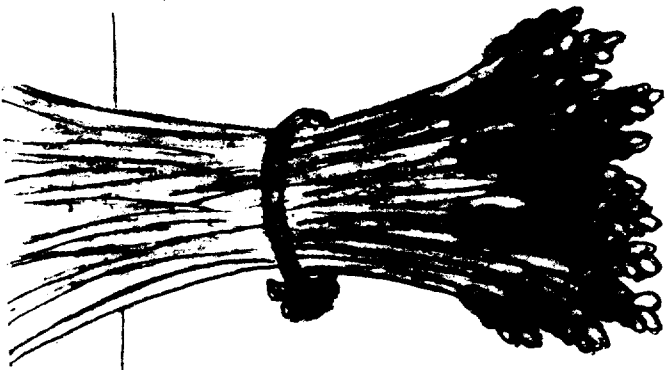
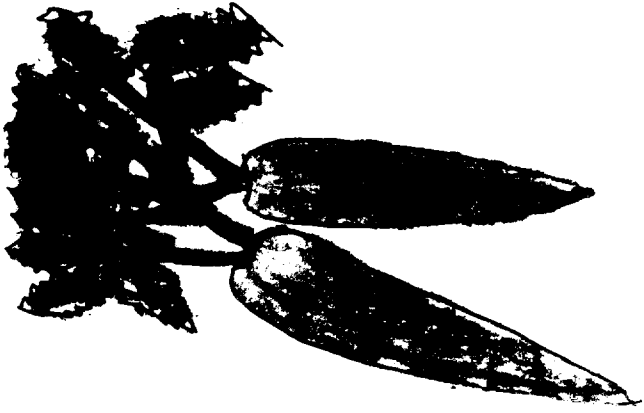
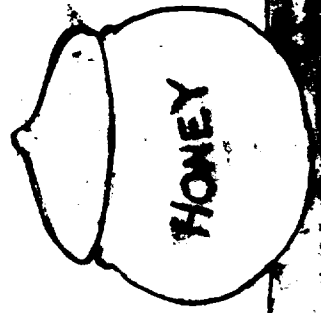
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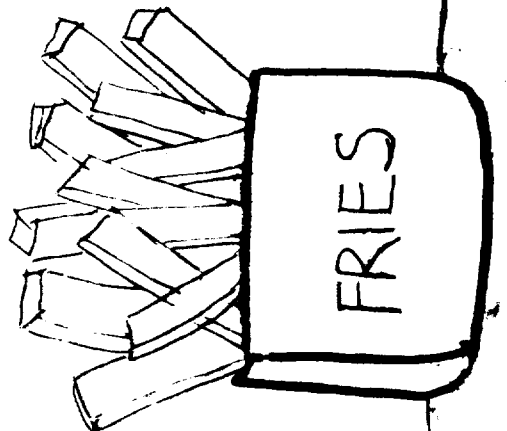
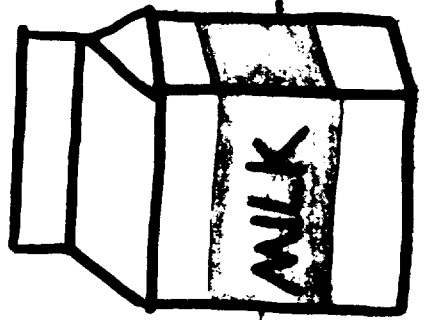
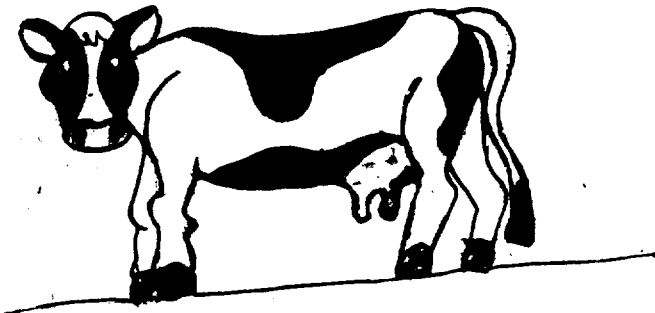
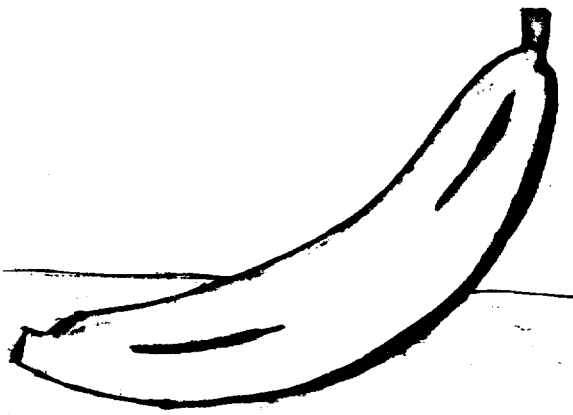
CEREAL



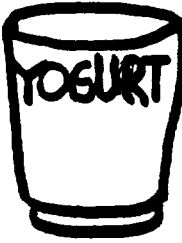

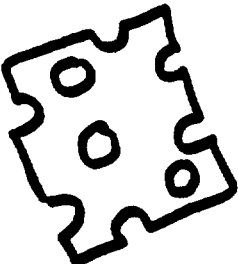
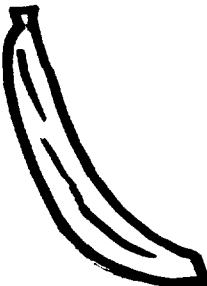
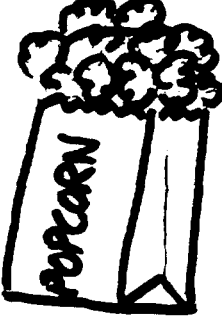
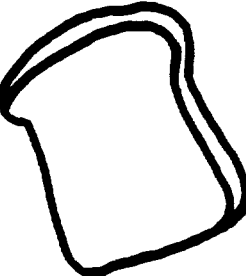



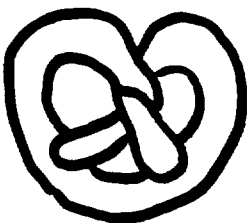
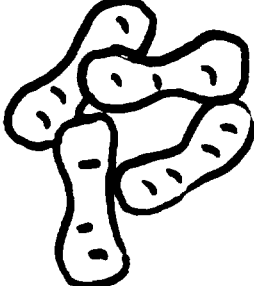

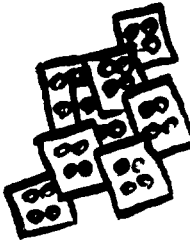
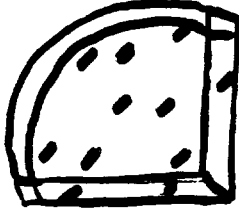

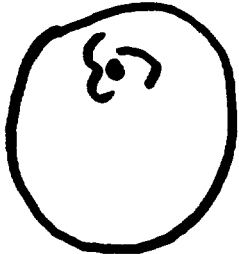


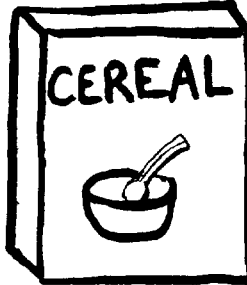
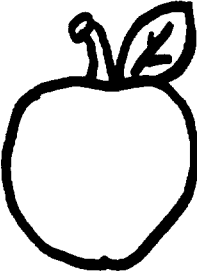
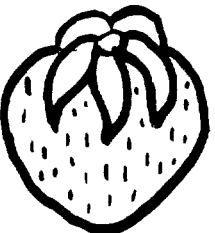

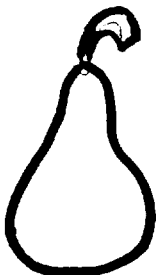

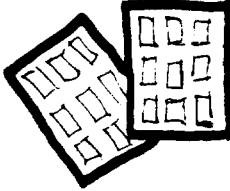







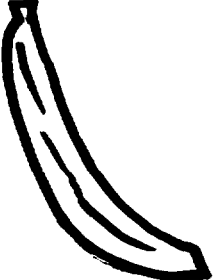
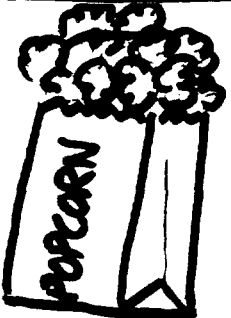
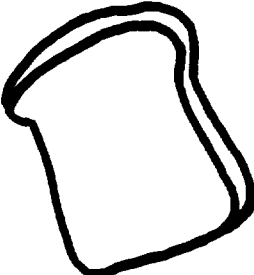
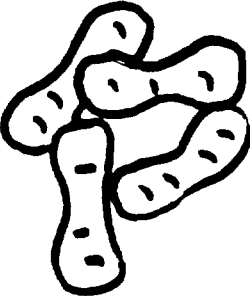


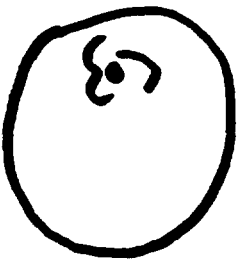


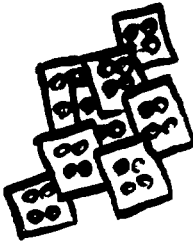
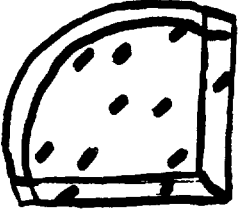

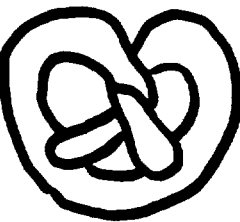
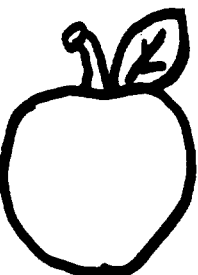
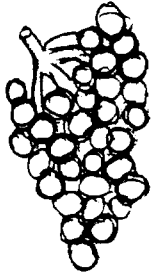
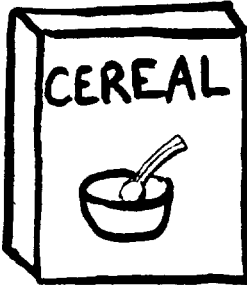
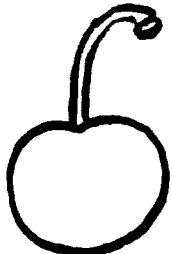
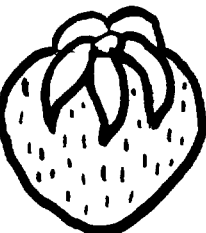

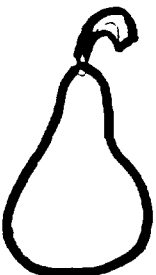
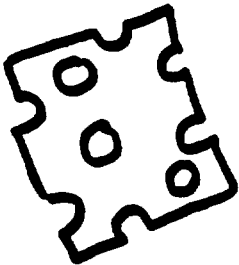
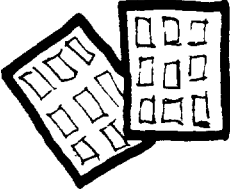




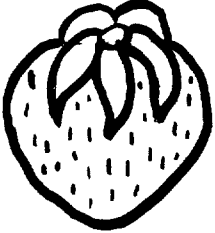


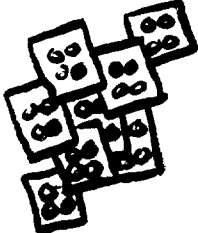

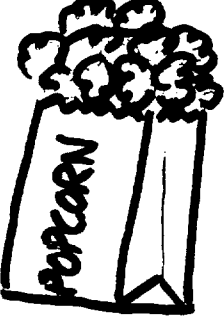
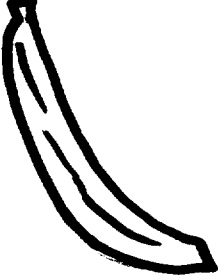


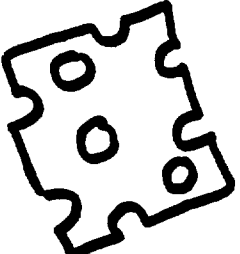

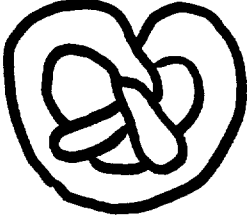

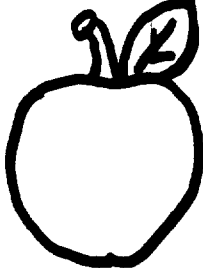
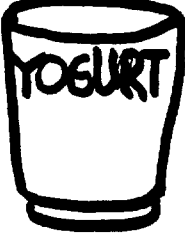
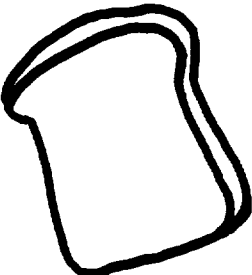
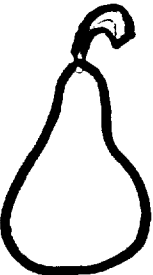
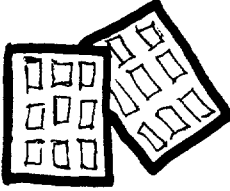



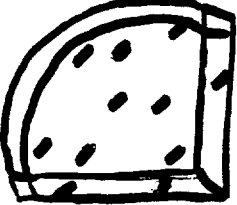
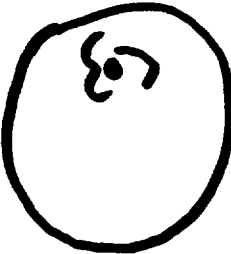
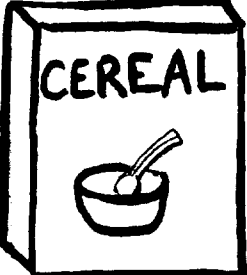
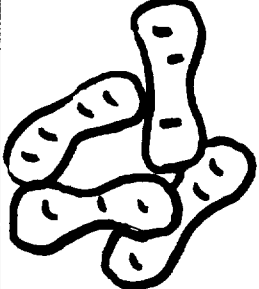
S N A C K

 <p>YOGURT</p>				 <p>POPCORN</p>
			 <p>PEANUT BUTTER</p>	
				 <p>MILK</p>
			 <p>CEREAL</p>	
			 <p>RAISINS</p>	

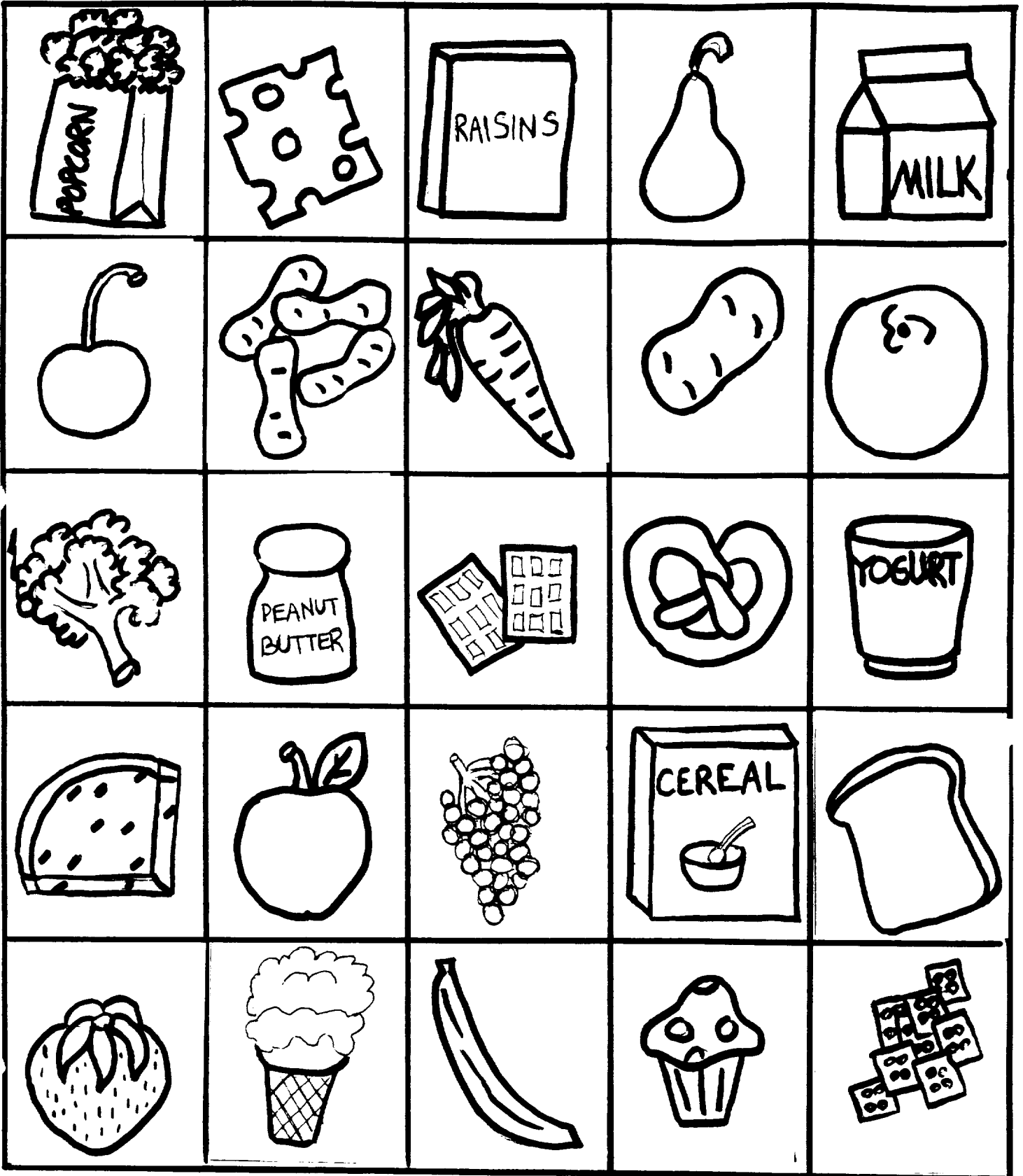
S N A C K

 <p>MILK</p>		 <p>RAISINS</p>		 <p>POPCORN</p>
				
	 <p>PEANUT BUTTER</p>			 <p>YOGURT</p>
			 <p>CEREAL</p>	
				

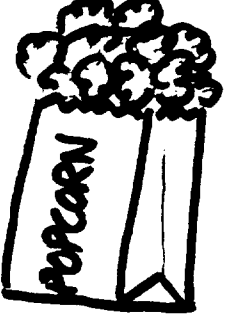
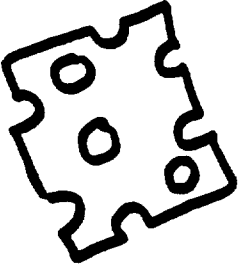




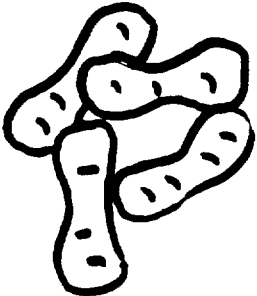


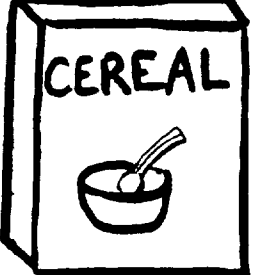


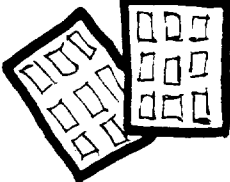
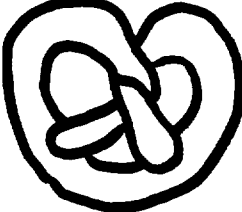
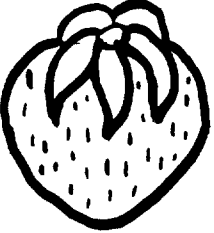
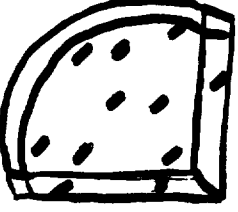
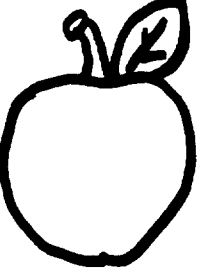
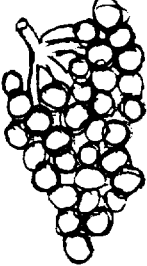
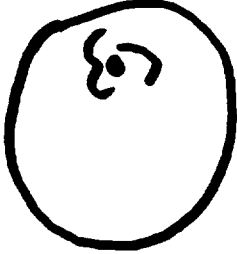
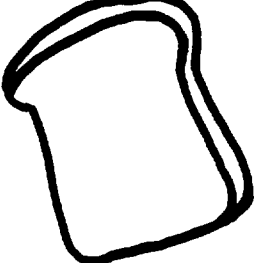


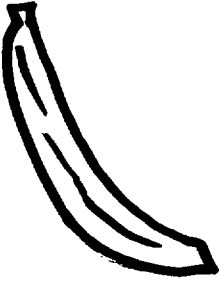

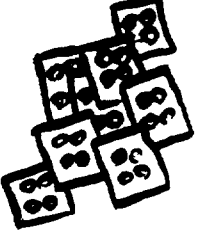
S N A C K

		 <p>PEANUT BUTTER</p>		
 <p>POPCORN</p>			 <p>MILK</p>	
		 <p>RAISINS</p>		 <p>YOGURT</p>
				
			 <p>CEREAL</p>	

S N A C K



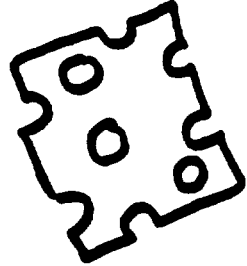
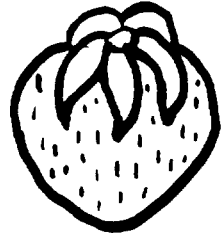
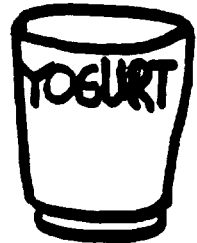

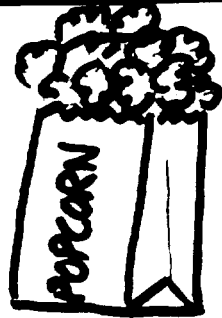
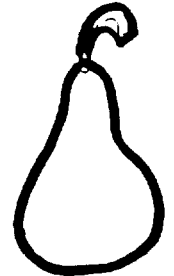
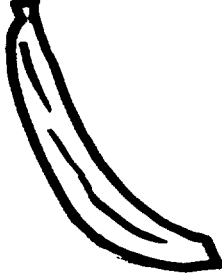





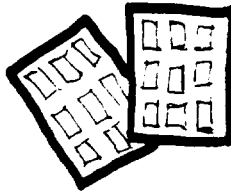
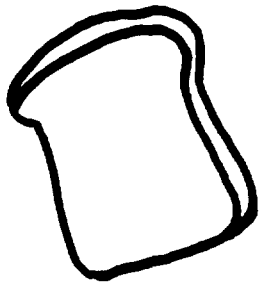

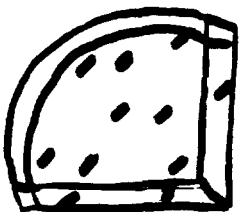
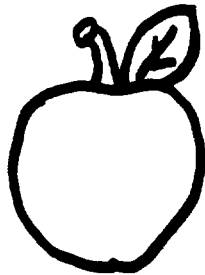

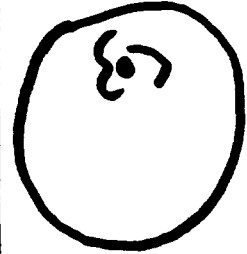
S N A C K

 A paper bag overflowing with popcorn, with the word "POPCORN" written on the side.	 A single slice of Swiss cheese with three holes.	 A rectangular box labeled "RAISINS".	 A simple line drawing of a pear.	 A carton of milk labeled "MILK".
 A single cherry with a short stem and a small leaf.	 A cluster of several beanitos.	 A single carrot with its leafy top.	 A jar of peanut butter labeled "PEANUT BUTTER".	 A box of cereal labeled "CEREAL" with a bowl of cereal and a spoon on the front.
 A head of broccoli on its stem.	 A single bean.	 Two gummy bears, one in front of the other.	 A single pretzel.	 A single strawberry with its stem and leaves.
 A triangular slice of watermelon with seeds.	 A single apple with a stem and a leaf.	 A bunch of grapes on a stem.	 A whole orange.	 A single slice of bread.
 A cup of yogurt labeled "YOGURT".	 An ice cream cone with a waffle cone and a scoop of ice cream.	 A single banana.	 A single muffin in a paper liner.	 A cluster of several gummy bears.

S N A C K



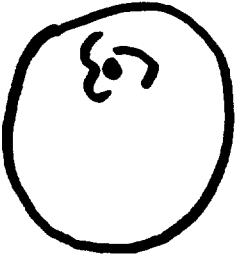
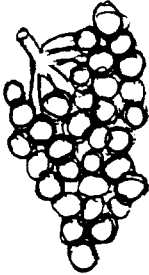
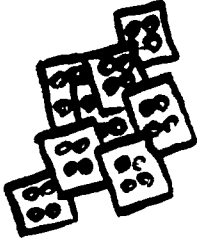




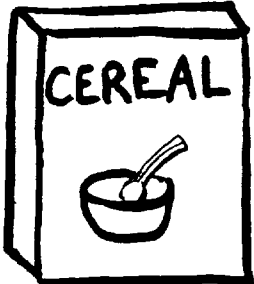
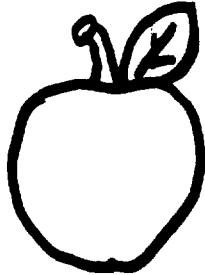
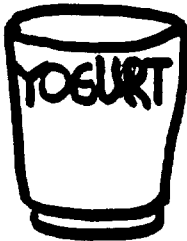
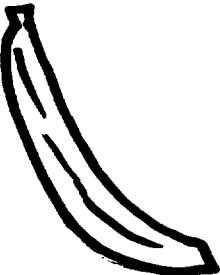
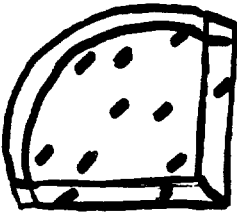
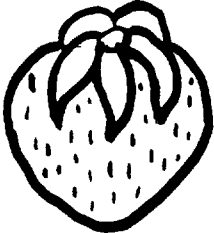

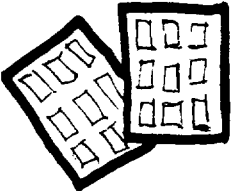

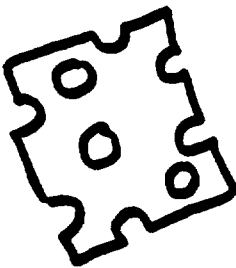
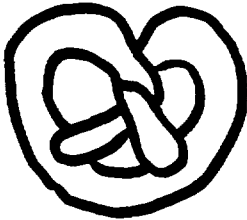




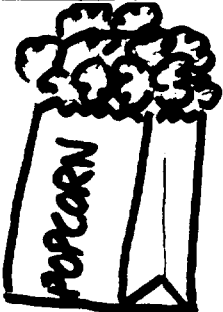
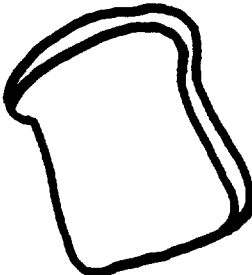
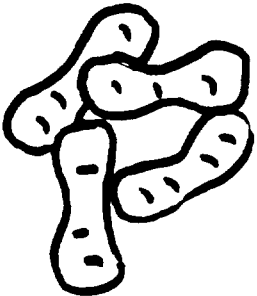
S N A C K

			 <p>CEREAL</p>	 <p>YOGURT</p>
	 <p>POPCORN</p>		 <p>RAISINS</p>	
				 <p>PEANUT BUTTER</p>
				
 <p>MILK</p>				

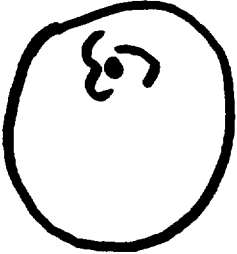
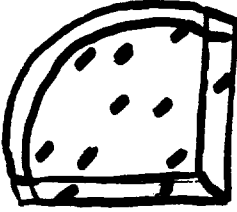
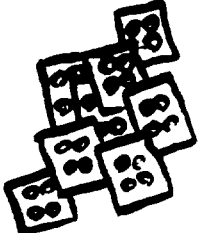

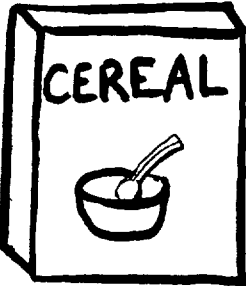
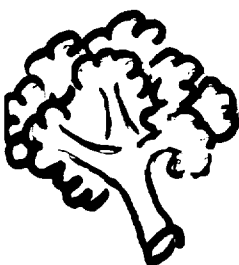

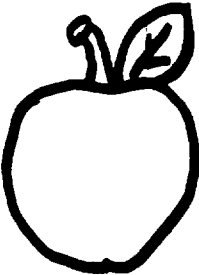
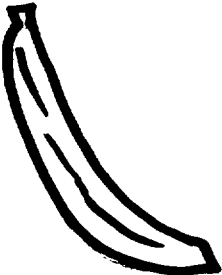

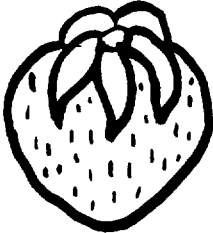
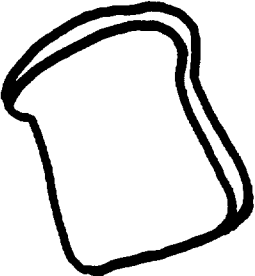
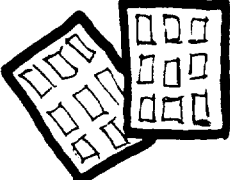
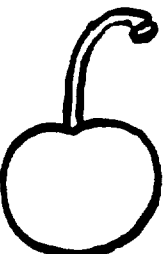
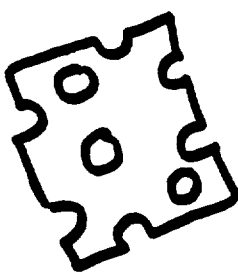




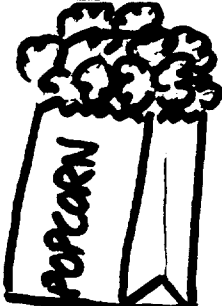
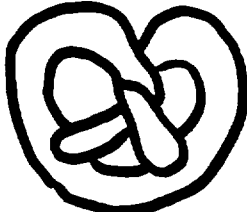
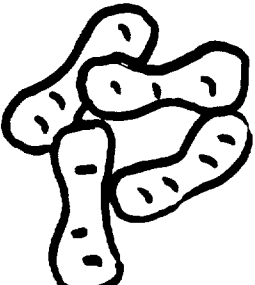
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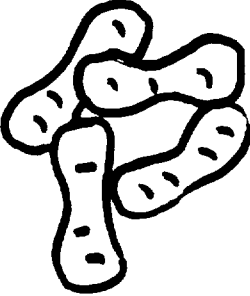

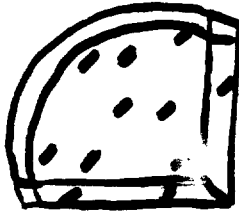
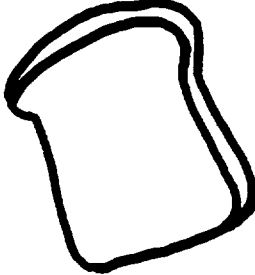

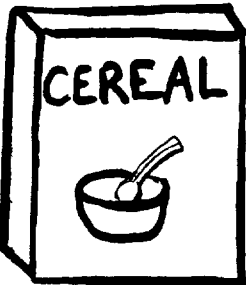

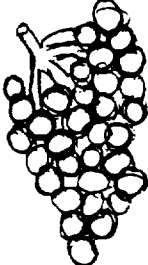
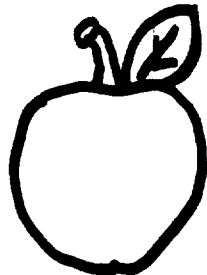

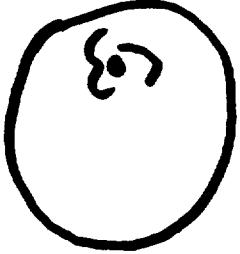

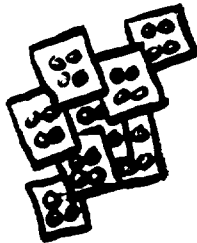
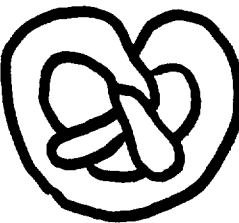
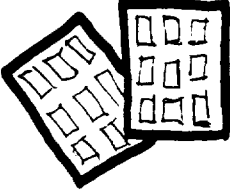
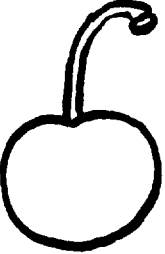
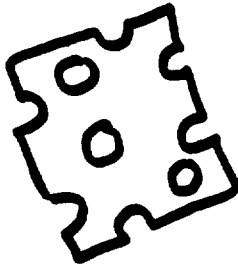


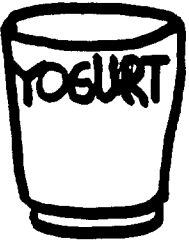
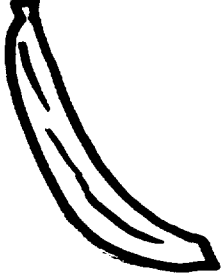

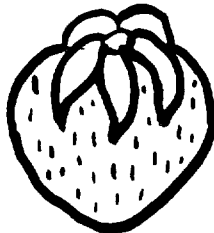
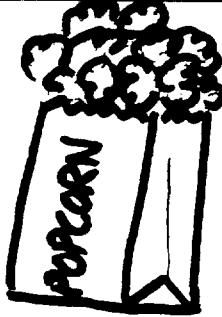

S N A C K

				 <p>PEANUT BUTTER</p>
		 <p>CEREAL</p>		 <p>YOGURT</p>
				
			 <p>RAISINS</p>	
 <p>MILK</p>		 <p>POPCORN</p>		


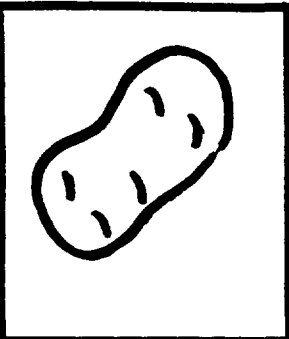
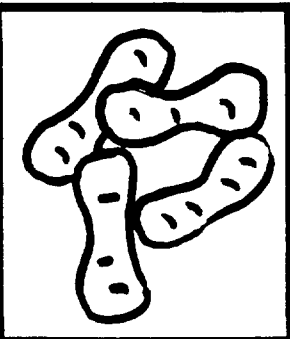
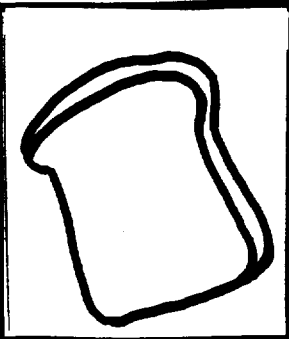
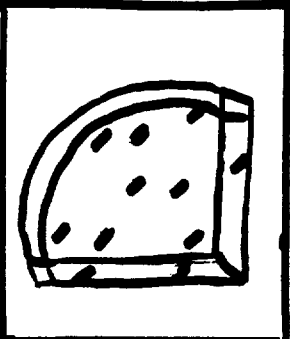
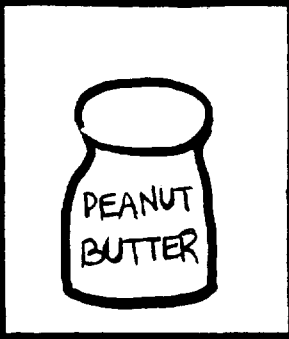

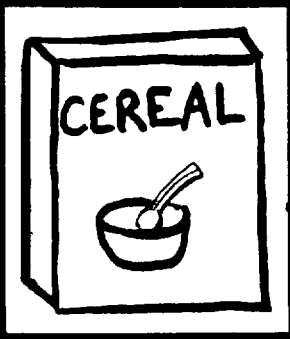
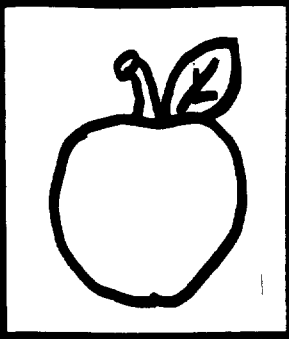
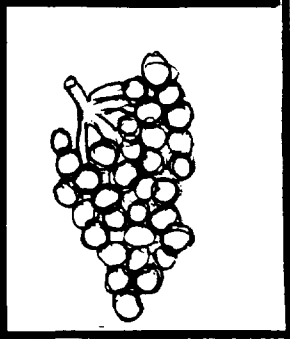

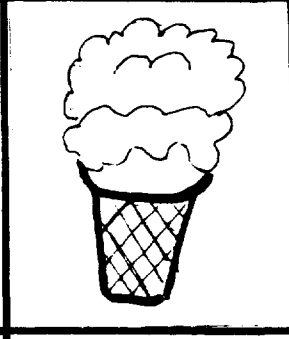
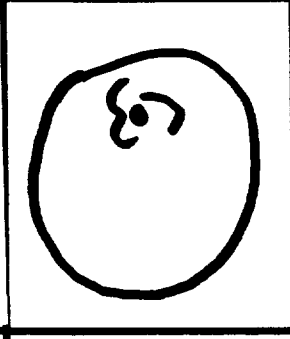
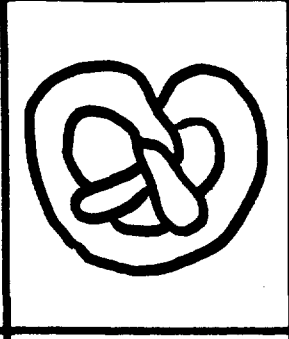
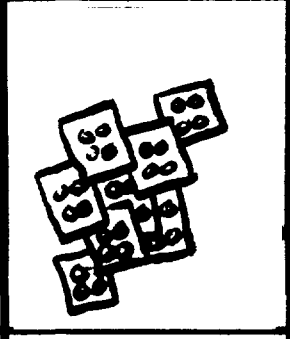
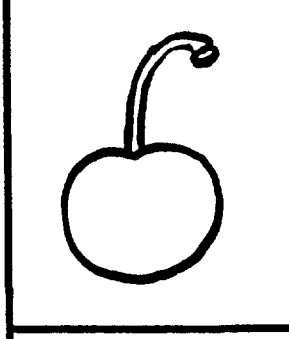

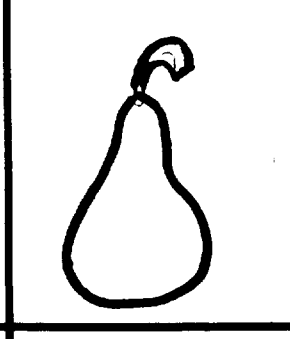
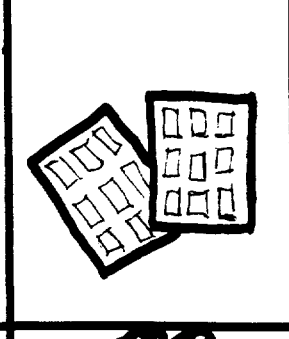
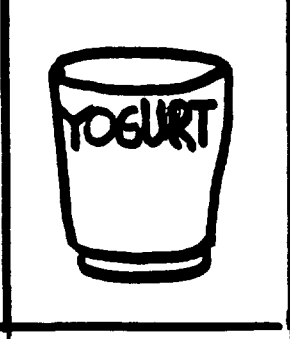
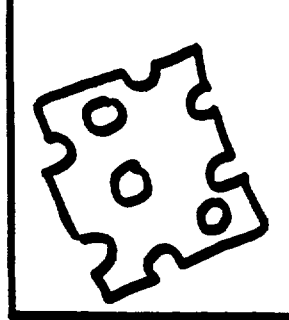

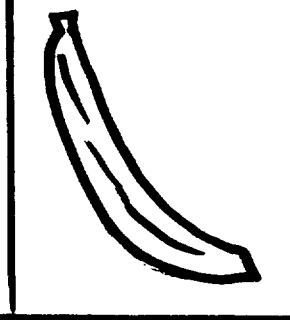
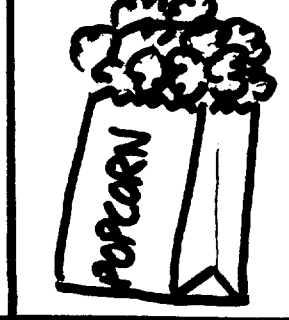

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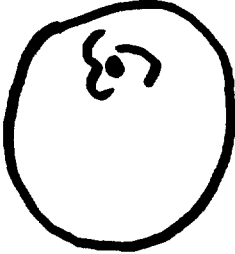
S N A C K

				 <p>PEANUT BUTTER</p>
 <p>CEREAL</p>				
				
			 <p>RAISINS</p>	 <p>YOGURT</p>
	 <p>MILK</p>		 <p>POPCORN</p>	

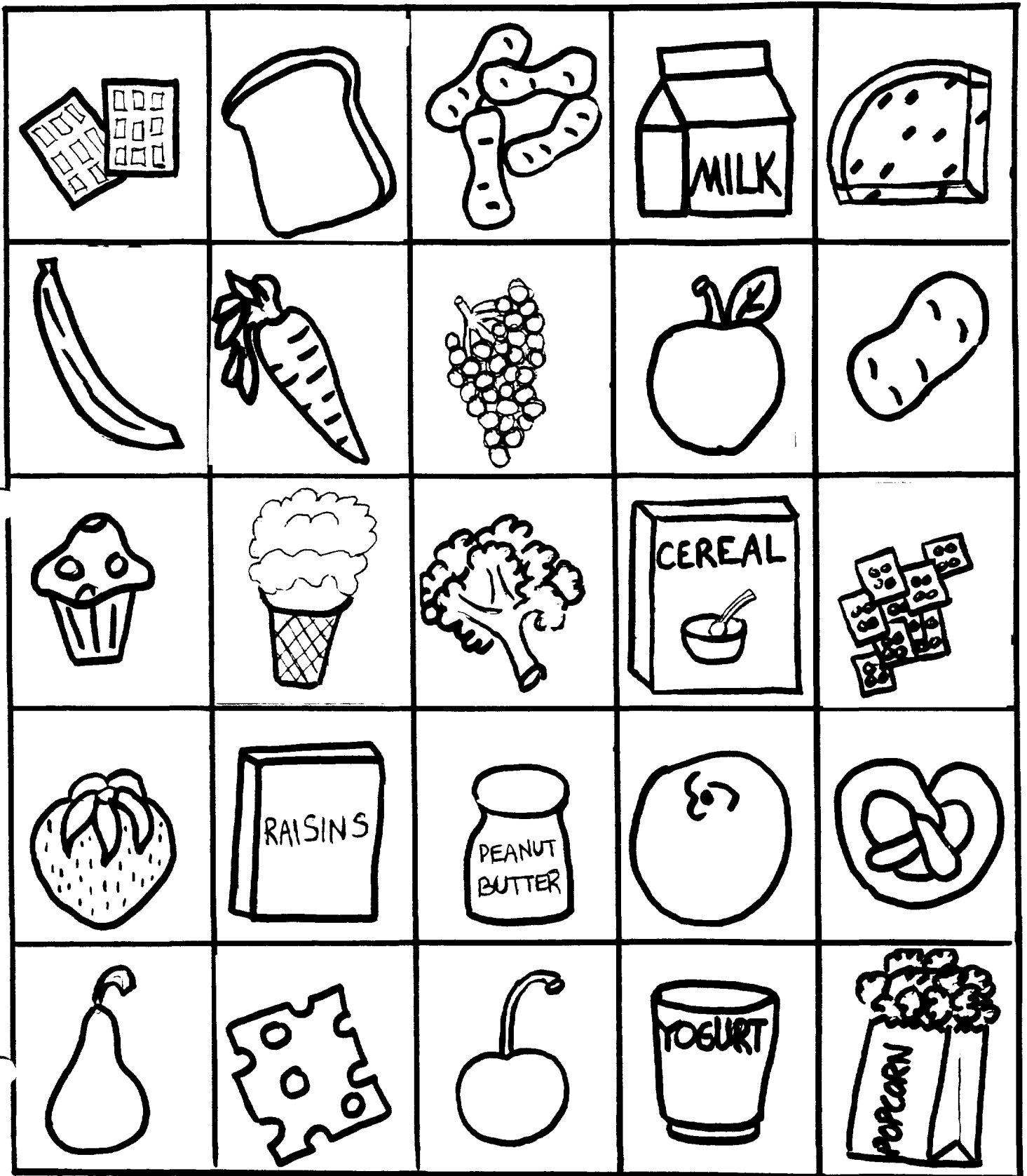
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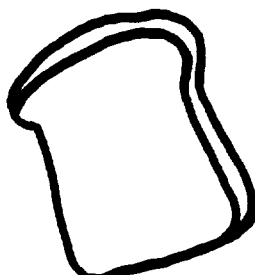
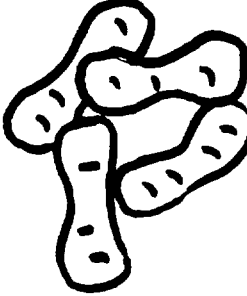
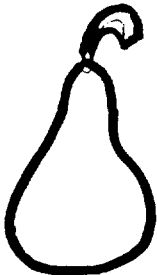




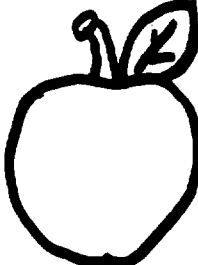
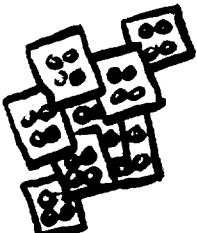



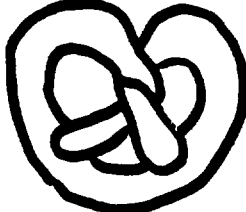
S N A C K

				
				
	 <p>PEANUT BUTTER</p>		 <p>CEREAL</p>	
	 <p>RAISINS</p>	 <p>YOGURT</p>		
	 <p>MILK</p>		 <p>POPCORN</p>	

S N A C K



S N A C K

 A bag of popcorn with the word "POPCORN" written on it.	 A single slice of bread.	 Several pieces of candy, including a lollipop and a round candy.	 A slice of Swiss cheese with holes.	 A pear.
 A banana.	 A carrot with its leafy top.	 A carton of milk with the word "MILK" written on it.	 A slice of pie.	 A kidney bean.
 A muffin.	 A bunch of grapes.	 An apple with a stem and leaf.	 A box of cereal with the word "CEREAL" and a bowl of cereal on the label.	 Several pieces of candy, including a lollipop and a round candy.
 An ice cream cone.	 A head of broccoli.	 A jar of peanut butter with the words "PEANUT BUTTER" written on it.	 An orange.	 A pretzel.
 A box of raisins with the word "RAISINS" written on it.	 A strawberry.	 A cherry.	 A cup of yogurt with the word "YOGURT" written on it.	 Several pieces of candy, including a lollipop and a round candy.