

LESSON 13



Brilliant Breakfast*

*Lesson adapted from Texas Education Agency Nutrition Education Curriculum Guide Grades 5-8, and a lesson plan developed by Ms. Michele Dorsey.

Background**

Breakfast is the most important meal of the day. Eating breakfast gives the body the energy it needs to start the day and perform the morning's tasks, from thinking to doing the dishes to working out. Generally, adults who regularly eat breakfast learned this lifelong good habit when they were children.

National studies show that children who eat breakfast are better prepared for the school day. They perform better in school, are tardy less often, and miss fewer days of school. Students who eat breakfast have also demonstrated better concentration, faster reaction times, higher energy levels, and better test scores.

To help make breakfast a lifelong habit, students (and adults) should be encouraged to start their day by eating breakfast. Any good, nutritious food can be eaten for breakfast. If people don't like typical breakfast foods, such as whole-grain cereal or toast, they can eat healthy leftovers from dinner. The most important thing is to eat a nutritious meal in the morning.

Breakfast should contain healthy foods such as whole-grain cereal or toast as well as fresh fruit and vegetables, not foods made with refined grains or added sugars, such as sweetened cereal, doughnuts, pastries, candy, or sugary drinks. The carbohydrate in nutritious breakfast foods gives the body energy, and some added protein helps stave off a midmorning drop in blood sugar that can make children lethargic before lunchtime. Healthy protein foods include dairy such as unflavored milk and plain yogurt, eggs, nuts (breakfast ideas include peanut butter on 100% whole-wheat toast or almonds sprinkled on steel-cut oatmeal), or even slices of turkey, cubes of tofu, or hummus.

Blood sugar levels indicate how much fuel (in the form of glucose) is immediately available to the body. When blood sugar levels drop, children (and adults) may feel hungry, drowsy, or less energetic and have trouble concentrating. Foods such as doughnuts, pastries, sweetened cereals, candy bars, soda, sports drinks, fruit punch, and other sugary drinks and desserts that contain refined grains and a lot of added sugar and are not the best choices for breakfast because they cause blood sugar to rise and drop quickly. Alternatively, breakfast choices containing a mix of healthy carbohydrate (from fiber-rich whole grains, fruits, and vegetables) and protein can help keep blood sugar levels stable throughout the morning until lunchtime.

Estimated Teaching Time and Related Subject Areas

Estimated teaching time: 1 hour

Related subject areas: math, science

Objectives

- Describe why they should eat a healthy breakfast.
- Identify the effects of eating a nutritious breakfast and a less-than-nutritious breakfast.
- Create breakfasts to fit various lifestyles and needs.

**Background information partially from Maryland Food Committee.

Materials

- Worksheet 13.1, Breakfast Club
- Worksheet 13.2, International Breakfast Club
- Overhead 13.1, Avoiding the Midmorning Slump
- Worksheet 13.1 Solutions



Worksheet 13.1

Breakfast Club

Name _____

Jeremy's Breakfast
Jeremy was late for school, so he left without eating breakfast. By midmorning (around 10 a.m.) he was fidgety and had trouble concentrating. His stomach was grumbling before lunchtime, and he had trouble completing his morning math quiz.

Tisha's Breakfast
Tisha was also running late for school, but when she got there, she went to the cafeteria and ate the school breakfast of a small apple, plain oatmeal, and a carton of unflavored milk. She felt great all morning and did very well on her math quiz.

Omar's Breakfast
Omar grabbed two doughnuts and a box of fruit punch as he ran out the door for school. He was full of energy and enthusiasm for a while, but then his mind started to wander, and like Jeremy, he had trouble finishing the math quiz.

Why did Jeremy, Tisha, and Omar feel the way they did by lunchtime?

- _____
- _____
- _____

Worksheet 13.2

International Breakfast Club

Name _____

Your school will have an international breakfast day. You will help plan the meal that will keep students focused and energized throughout the morning. Circle the graph that shows how a healthy breakfast affects blood sugar levels. Write a sentence describing what's happening in the graph.

Considering the graph circled, pick two countries from table 13.1 and plan a healthy breakfast from each of them, choosing a combination of foods that will keep your blood sugar stable until lunchtime.

Country 1: _____
Breakfast menu: _____

Country 2: _____
Breakfast menu: _____

Overhead 13.1

Avoiding the Midmorning Slump

A good breakfast has healthy carbohydrate (approximately 40 g) and some protein (12–18 g). This combination helps the body avoid a midmorning slump in energy. You can see how many grams of protein or carbohydrate there are in a food by looking at its food label.

When blood sugar drops below the fasting level, a person may have a harder time concentrating on schoolwork, may feel light-headed, and may be less alert.

Jeremy's breakfast:

Breakfast #1
Skips morning meal
Energy must come from body storage

Carbohydrate: 0 grams
Protein: 0 grams

Tisha's breakfast:

Breakfast #2
Optimal morning meal example
1/2 cup plain oatmeal
1 apple
1 small apple

Carbohydrate: 44 grams
Protein: 12 grams

Omar's breakfast:

Breakfast #3
High-carbohydrate, low-protein meal example
2 doughnuts
1/2 cup fruit punch

Carbohydrate: 27 grams
Protein: 2 grams

Worksheet 13.1 Solutions

Breakfast Club

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Jeremy was late for school, so he left without eating breakfast. By midmorning (around 10 a.m.) he was fidgety and had trouble concentrating. His stomach was grumbling before lunchtime, and he had trouble completing his morning math quiz.

Tisha's Breakfast
Tisha was also running late for school, but when she got there, she went to the cafeteria and ate the school breakfast of a small apple, plain oatmeal, and a carton of unflavored milk. She felt great all morning and did very well on her math quiz.

Omar's Breakfast
Omar grabbed two doughnuts and a box of fruit punch as he ran out the door for school. He was full of energy and enthusiasm for a while, but then his mind started to wander, and like Jeremy, he had trouble finishing the math quiz.

Why did Jeremy, Tisha, and Omar feel the way they did by lunchtime?

- Jeremy did not eat anything in the morning. He did not break his overnight fast, so his energy needed to come from body storage. This kept his blood sugar levels low, making him hungry, lethargic, and distracted.
- Tisha ate an excellent breakfast with whole grains (oatmeal), a small apple, and some protein (primarily from the unflavored milk). This breakfast held her blood sugar at normal levels throughout the morning, keeping her alert and energized until lunchtime.
- It was good that Omar remembered to eat breakfast. However, his breakfast was not ideal. He ate foods with refined grains and added sugar. With so much sugar (and no protein), Omar felt tired and restless around midmorning because his blood sugar had dropped.

Procedure

1. Ask the students to raise their hands if they like to eat breakfast.
2. Ask the students if they know what the word *breakfast* means. Tell them that *breakfast* means “breaking the fast” and that a fast is when the body has gone for a long time without food—such as overnight.
3. Tell the students that during a fast, the amount of sugar in the blood decreases (the sugar eventually is transported to muscles and organs to create energy for work). When your blood sugar levels are low, your body is not getting all the energy it needs to work efficiently whether you are playing or thinking.

4. Tell the students that when they eat breakfast, they are breaking the overnight fast and giving the body what it needs to work until lunchtime. On the other hand, if they skip breakfast in the morning, they may
 - be less alert;
 - feel less energetic;
 - be less efficient at completing tasks;
 - experience headaches, stomach cramps, and irritability; or
 - achieve less.
5. Ask the students what they like to eat for breakfast. Write their responses on the board. Tell the students that they should all try to eat breakfast every morning and that eating any type of nutritious food in the morning is better than eating nothing. Some foods, though, are better than others for breakfast.
6. Remind the class of the Principles of Healthy Living (introduced in lesson 1), especially the ones that relate to food choices and breakfast:
 - Choose colorful fruits and vegetables instead of junk food.
 - Choose whole-grain foods, and limit foods with added sugar.
 - Make the switch from sugary drinks to water.
 - Choose foods with healthy fat, limit foods high in saturated fat, and avoid foods with trans fat.
 - Eat a nutritious breakfast every morning.

Look at the list of foods written on the board. Circle the ones that fit the healthy living goals and help students start the day off in a healthy way. If appropriate, remind students that breakfast is available to them before school in the cafeteria.
7. Tell the students that the ideal breakfast contains carbohydrate (from foods such as whole-grain cereal or 100% whole-wheat toast and fresh fruit—but not from foods made with refined grains or added sugar, such as sweetened cereal, pastries, doughnuts, candy bars, and desserts) and some protein (from healthy protein foods such as peanut butter, unflavored milk and plain yogurt, nuts, eggs, turkey slices, tofu, and hummus). Carbohydrate gives the body energy, and protein helps stave off a midmorning drop in blood sugar, which can make students feel hungry, drowsy, sluggish, and irritable before lunchtime.
8. Also tell students that along with foods made with refined grains or added sugar, beverages high in added sugar (such as soda, energy drinks, sports drinks, and fruit punches) are not ideal for breakfast because they can cause blood sugar levels to rise quickly and then drop below fasting levels within a few hours. These types of foods and drinks also tend to contain very few other nutrients such as vitamins and minerals. Remind students that although 100% fruit juice is a popular breakfast drink that does contain nutrients, it should be limited to 4 to 6 ounces (120-170 ml) per day, and eating the whole fruit instead is a better choice. If a student does not like typical breakfast foods, grabbing a slice of last night's chicken or making a sandwich on whole-grain bread is better than eating sweets or nothing at all.
9. Distribute and review Worksheet 13.1, Breakfast Club. After students have completed the worksheet, use Overhead 13.1, Avoiding the Midmorning Slump, to review their answers, and show them what happens to blood sugar levels with each type of breakfast. Discuss the following points with Overhead 13.1:
 - Breakfast 1 (the skipped breakfast) did not provide any food, so energy must come from body storage. Blood sugar levels remain at or below fasting levels, which are low and do not provide Jeremy with enough energy for work.

- Breakfast 2 provides enough protein to keep Tisha alert and to discourage mid-morning hunger pangs, and it provides enough healthy carbohydrate and fiber (from whole grains and fruit) and protein for sustained energy, which means that she will be able to concentrate until it is time for lunch.
 - Breakfast 3 contains too much refined grains and added sugar and not enough protein to keep blood sugar levels up until lunch. This quick rise and fall in blood sugar results in a midmorning slump that makes it hard for Omar to concentrate on his work.
10. With the class, create several nutritious breakfast menus that address the situations of the people in the following list.

Breakfasts for people who are in a rush:

- A breakfast smoothie made with unflavored milk, ice, and frozen fruit
- A slice of cheese and an apple
- Plain yogurt with fresh berries
- Healthy leftover dinner entrées
- A peanut butter sandwich on whole-grain bread and a banana
- A hard-boiled egg and a piece of fruit

Breakfasts for people who do not like typical breakfast foods:

- 100% whole-wheat crackers with cheese or almond butter
- Vegetable pizza on a 100% whole-wheat English muffin
- Breakfast burrito with a 100% whole-wheat tortilla, brown rice, and beans
- Hummus, lettuce, and tomato sandwich on a 100% whole-wheat pita

Breakfasts for people who enjoy cooking:

- Omelet with tomatoes, peppers, and a small amount of cheese
 - Homemade buckwheat pancakes with unflavored milk
 - Homemade granola made with whole grains, nuts, seeds, and healthy oils
 - Fruit and steel-cut oatmeal
11. Distribute Worksheet 13.2, International Breakfast Club, and arrange the class in small groups. Have each group circle the graph that shows the effect of a healthy breakfast on blood sugar levels (graph 1), and ask them to describe what is happening in the graph. Review some best-choice breakfast foods commonly eaten in different parts of the world, and have each group create a healthy breakfast by mixing and matching or choosing combination foods that could be served at an international breakfast day. Remind students that an ideal breakfast includes healthy sources of carbohydrate (particularly fruits, vegetables, and whole grains) and some healthy protein to keep blood sugar levels steady until lunchtime.
12. Instruct students to create their own nutritious, energizing breakfasts based on their own lifestyles, traditions, and food preferences. Ask some of them to share their breakfast menus with the class.

Extension Activity

Have students (individually or in pairs) create a poster depicting a healthy breakfast. This may be a breakfast they enjoy, a breakfast that fits one of the scenarios discussed previously (e.g., a meal that suits someone who does not like breakfast), or an international breakfast from Worksheet 13.2.

