

Name: _____

Date: _____

What Is Food?

This sounds like a very simple question. We all know what food is! It's what we eat for breakfast, lunch, and supper. It's cereal and eggs and sandwiches and hamburgers and bread and potatoes and apples and carrots and more.

To understand how living things get their food, you need to understand a special scientific definition of the word *food*. This definition may be different from what you usually think of as food.

IN YOUR SCIENCE NOTEBOOK

1. Write down how you would answer the question, *What is food?* (Try to explain what food is without just listing examples of the kinds of food you eat.)

Food is ...

2. Do you think chewing gum is food? Explain your thinking.

Chewing gum (is or is not) food because ...

ADVANCE ORGANIZER: Now read about how scientists define *food*. As you read, think about these questions: ***Do scientists think about food the same way I do? Or do they have different ideas?***

How Do Scientists Define Food?

In everyday life, people have many ways of thinking about what food is. Some people say that juice is **not** food because we don't chew it. Others say juice **is** food because we take it into our bodies. In everyday life, we can have different ways of thinking about food, and no one gets confused.

But scientists did experiments and found out that the things we take into our bodies do different kinds of jobs. Water doesn't do the same thing for your body that meat or sugar or aspirin or vitamins do. Things that scientists call food do an important job for the body. Read the **scientific definition of food** in the following box.

Food is **matter** (building materials) that contains **energy** living things can use to live and grow. All living things need both the matter and energy in food to grow, to heal wounds, and to keep all their parts working.

What do you think are the two most important words in this scientific definition?



STOP AND THINK

Have you heard of the two most important words in the scientific definition? What ideas do you have about what they mean? Talk with your class about your ideas.

Now continue to read about matter and energy in food.

Matter is stuff (materials). Scientists usually define **matter** as anything that takes up space and has mass. So matter is stuff that has a certain size and weighs something, even if just a little bit. If it weighs something, we say it has mass. So everything you see and touch is matter. Some matter is so tiny you can't see it or touch it. For example, you can't see a molecule of oxygen in the air, but it still has a tiny bit of mass (weight) and takes up a tiny bit of space, so it's matter. Matter provides the physical building blocks that living things use to grow (to get bigger). You grow taller by adding more matter to your body.

Energy is harder to understand because we can't touch it or weigh it or measure how long or tall it is. It is **not** matter! It does **not** take up space, and it does **not** weigh anything. There are different kinds of energy, but food energy is what makes all your cells and body parts work. It's used to make you breathe, to move blood and muscles, to repair cuts, to help you think, and to do all the other things your body does.

How do living things get the matter and energy they need to live and grow?

Living things get **all** of their **energy** from food. Without food, they have no energy to continue living. Energy in food is measured in **Calories**. Foods with a lot of Calories have a lot of stored energy. We can tell whether materials are food by looking to see if they contain Calories.

Living things also get the all the **matter** they need to live and grow from food. Without food, living things have no building materials to grow, to heal cuts, and to build all the things necessary for survival. We can tell whether materials are matter by looking to see if they have mass, which is sometimes measured in **grams (g)** or **milligrams (mg)**.

INVESTIGATION: How Can We Find Out Whether Chewing Gum Is Food?

Is Chewing Gum Food?

Material	Does It Have Mass (g)? (An Indicator That It's Matter)	Does It Have Calories? (A Measure of Energy)	Is It Food by the Scientific Definition?
Chewing Gum #1			
Chewing Gum #2			

Analysis Question

Is chewing gum food by the scientific definition? Explain your thinking.

Chewing gum (is or is not) food. My evidence is ...

My reason is ...

Reflect and Summarize

Look at the definition of *food* that you wrote in your science notebook at the beginning of today's lesson. Compare it with the scientific definition in the box on page 1.

What new ideas do you have about the focus question, *What is food?*

I learned ...

My new ideas are ...