Matter and Energy
Lesson 1: Matter
Reading Comprehension

Matter

1 The world is full of many different objects. Animals, plants, rocks, water, books, pens, cars, and air are all objects. Each object is made of "stuff." The "stuff" that makes up an object is called matter. Humans are made of matter. Air is made of matter. Water is made of matter.

2 Matter can have many different sizes and shapes. Different objects have different amounts of matter. The more matter an object has, the more mass it has. Mass is the amount of matter an object has. A bear has more mass than a rabbit. That is because a bear is made of more matter than a rabbit. Mass can be measured with a balance scale in units called grams or kilograms. The more mass an object has, the more grams or kilograms it has.

3 The mass of an object is not exactly the same as its weight. Weight is the force of gravity that pulls on an object. The more mass an object has, the more that gravity pulls on the object. More gravity pulls on a bear than a rabbit. This is because the bear has more mass.

4 The mass of an object remains the same wherever it is. However, the weight of an object can be different in different places. For example, an object on Earth has a certain mass and a certain weight. The same object could be placed on the Moon. On the moon it would have the same mass. It would also have the same mass and the same density. However, it would weigh less on the Moon than on Earth. This is because the Moon has less gravity than Earth.

5 Matter takes up space. The space an object takes up is called volume. Volume can be measured using cubic centimeters, liters, and milliliters. Different objects take up different amounts of space. An elephant takes up more space than a dog. So, the volume of an elephant is more than a dog.

6 The amount of mass an object has in a certain volume is called density. Objects with more density than water will sink. Objects with less density than water will float. Two different objects may take up the same amount of space but have different densities. For example, a brick has density. The same size, or volume, of foam has less density than the brick. The foam has less matter in the same volume. The object with more density has more mass in the same amount of space.