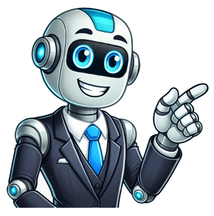
I'm not a bot



Which of the following is an example of matter

Matter has mass and occupies space.What is matter? In science, matter is defined as any substance that has mass and takes up space. Basically, it’s anything that can be touched. Yet, there are also phenomena that are not matter, such as light, sounds, and other forms of energy. A space devoid of all matter is called a vacuum.Anything you can touch, taste, or smell consists of matter. Examples of matter include:AtomsIonsMoleculesFurniturePeoplePlantsWaterRocksYou can observe things which are not matter. Typically, these are forms of energy, such as sunlight, rainbows, thoughts, emotions, music, and radio waves.You can identify matter by its chemical composition and its state. States of matter encountered in daily life include solids, liquids, gases, and plasma. Other states of matter exist near absolute zero and at extremely high temperatures.Solid – State of matter with a defined shape and volume. Particles are packed close together. Example: IceLiquid – State of matter with defined volume, but no defined shape. Space between particles allows this form of matter to flow. Example: WaterGas – State of matter without a defined volume or shape. Particles can adjust to the size and shape of their container. Example: Water vapor in cloudsThe terms “matter” and “mass” are related, but don’t mean exactly the same thing. Mass is a measure of the amount of matter in the sample. For example, you might have a block of carbon. It consists of carbon atoms (a form of matter). You could use a balance to measure the block’s mass to obtain a mass in units of grams or pounds. Mass is a property of a sample of matter.Matter consists of building blocks. In chemistry, atoms and ions are the smallest units of matter that cannot be broken down using any chemical reaction. But, nuclear reactions can break atoms into their subunits. The basic subunits of atoms and ions are protons, neutrons, and electrons. The number of protons in an atom identifies its element.Protons, neutrons, and electrons are subatomic particles, but there are even smaller units of matter. Protons and neutrons are examples of subatomic particles called baryons, which are made of quarks. Electrons are examples of subatomic particles called leptons. So, in physics, one definition of matter is that it consists of leptons or quarks.Antimatter consists of antiparticles. Antimatter is still matter, but while ordinary matter consists of leptons and baryons with a positive number, antimatter consists of leptons and baryons with a negative number. So, there are antielectrons (called positrons), antiprotons, and antineutrons.Antimatter occurs in the world. For example, lightning strikes, radioactive decay, and cosmic rays all produce antimatter. When antimatter encounters ordinary matter, the two annihilate each other, releasing a lot of energy. But, this isn’t the universe-ending event you see in science fiction. It happens all the time.Matter made from protons, neutrons, and electrons is sometimes called ordinary matter. Similarly, a substance made of leptons or quarks is ordinary matter. Scientists estimate about 4% of the universe consists of ordinary matter. About 23% is made of dark matter and 73% consists of dark energy. The simplest definition of dark matter is that it consists of non-baryonic particles.Dark matter is one form of what physicists call “exotic matter.” Other types of dark matter may exist, potentially with bizarre properties, such as negative mass!de Podesta, M. (2002). Understanding the Properties of Matter (2nd ed.). CRC Press. ISBN 978-0-415-25788-6.Olmsted, J.; Williams, G.M. (1996). Chemistry: The Molecular Science (2nd ed.). Jones & Bartlett. ISBN 978-0-8151-8450-8.Tsan, U.C. (2012). “Negative Numbers And Antimatter Particles”. International Journal of Modern Physics E. 21 (1): 1250005–1–1250005–23. doi:10.1142/S021830131250005XRelated Posts What do steam, a bicycle, and a cup of tea all have in common? They are all made of matter.Now imagine a mountain, a lake and air.These three things are the three states in which matter occurs: solids, liquids, and gases.Mountains are made from rock. Rock is an example of a solid. A lake is made up of water. This is an example of a liquid. The air we breathe is a gas.Rocks, like those found in the Mourne mountains, are a solidA solid, such as a table, has a definite shape that is difficult to change.This is because the particles of a solid have very firm bonds, which means solids are usually difficult to break.Most solids are hard. Some examples of hard solids include mountains, tables, books, and balls.Solids such as rubber have a shape that can be changed.Rocks, like those found in the Mourne mountains, are a solidWater, like in Lough Neagh, is a liquidSo what do liquids have in common with each other? Well, for a start, liquids can flow. They do not have fixed shapes.A liquid's shape changes to fit its container. However, they do have a fixed volume.Next time you have a drink, look carefully inside your glass. The liquid you are drinking has taken on the shape of the glass.However, if you spilt that drink, the shape of the liquid changes. And if you pour any remaining liquid into a different container, the shape of the liquid changes. But the volume remains the same.Water is the most common liquid and is essential for life. It is found in oceans, rivers, lakes, and even in the air as water vapour.Water, like in Lough Neagh, is a liquidThe air, that is all around us, is made up of gases.Now let's think about gases. A gas quickly fills any space it is put into because its particles move fast.This means that a gas takes the shape of its container. For example, we fill balloons up with the gas helium.Gases do not have fixed shapes, and they move easily. We are not able to see most.For example, we walk through the air when we're walking about during our day. Mostly we cannot see this air or even feel the air.The air, that is all around us, is made up of gases.The three states of matter (solids, liquids and gases) are all around us and are used in many different ways.A bicycle is a great way to see three states of matter existing together in one place. Many parts of a bicycle are made of solids. A bicycle frame is solid, as are the wheels.Your bicycle tyres are filled with air, a gas. And the oil on your bicycle chain is an excellent example of a liquid.Matter can change from one state to another, for example, a liquid into a solid or a gas into a liquid. How can we change liquids into solids? We need either a change in temperature or pressure.Let's use water as it as a perfect example. How does water turn into ice? Through freezing, when the temperature becomes really cold.And how does ice turn into water? When the temperature is hot enough, ice melts.Water is unusual as it can be found in all three states of matter.In solid form, water is ice; in liquid form, water and, as a gas, steam. In all three different states, water is essential to everything on Earth.Skip image galleryWhen water is at room temperature it is a liquid.When water is frozen it turns to ice, a solid.When water boils it turns into steam, a gas.Language:EnglishCymraegGaeilgeGàidhlig Matter has mass and occupies space.What is matter? In science, matter is defined as any substance that has mass and takes up space. Basically, it’s anything that can be touched. Yet, there are also phenomena that are not matter, such as light, sounds, and other forms of energy. A space devoid of all matter is called a vacuum.Anything you can touch, taste, or smell consists of matter. Examples of matter include:AtomsIonsMoleculesFurniturePeoplePlantsWaterRocksYou can observe things which are not matter. Typically, these are forms of energy, such as sunlight, rainbows, thoughts, emotions, music, and radio waves.You can identify matter by its chemical composition and its state. States of matter encountered in daily life include solids, liquids, gases, and plasma. Other states of matter exist near absolute zero and at extremely high temperatures.Solid – State of matter with a defined shape and volume. Particles are packed close together. Example: IceLiquid – State of matter with defined volume, but no defined shape. 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