



Mixing Matter ::|·

Introduction

What materials make up some of the items you see around you?

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(applying)

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Introduction

Are most of the items around you made of a single kind of material or more than one?

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(understanding)



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Introduction

Can you think of anything that isn't made of matter?

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Elements

How would you describe what an *element* is?

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Elements

What is one substance that is made of only one element?

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Elements

What is one substance that is made of more than one element?

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Elements

How do elements get their symbols?

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Atoms

What are the particles that make up an atom?

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(remembering)



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Atoms

What is the smallest part of an iron bar?

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(applying)

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Atoms

Which is *heavier*, an atom with two protons and two neutrons or an atom with two protons and four neutrons?

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Atoms

How would you construct a model of an atom?

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Atoms

How would the world be different if the only elements actually were earth, air, fire, and water, as once believed?

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(evaluating)



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Combining Matter

Which of the three kinds of atomic particles is involved in the bonding of atoms?

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Combining Matter

What happens during a chemical reaction?

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Combining Matter

What is a *molecule*?

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Combining Matter

Which is an example of a molecule: Au, O₂, or C?

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(understanding)



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Combining Matter

How many carbon and how many oxygen atoms bond in a carbon dioxide (CO_2) molecule?

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Combining Matter

Why is a water (H_2O) molecule considered to be a *compound*?

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(understanding)



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Combining Matter

Which is an example of a compound: O_2 , O_3 , or CO_2 ?

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(understanding)

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Combining Matter

How can compounds differ from the separate elements that make them up?

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(analyzing)



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Changing Matter

What is the difference between a physical and a chemical change?

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(understanding)

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Changing Matter

Is tarnish forming on a silver plate a physical change or a chemical change?

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(applying)



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Changing Matter

Is condensation of water from vapor to liquid a physical change or a chemical change?

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(applying)

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Changing Matter

Would you be more concerned about something you consider precious going through a physical or a chemical change? Why?

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(evaluating)



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Mixing Matter

Why are mixtures examples of physical changes?

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(analyzing)

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Mixing Matter

What are some mixtures other than those mentioned in the book?

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(applying)



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Mixing Matter

How can you identify the different substances that make up a mixture?

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(understanding)

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Mixing Matter

How would you separate the different substances in soil?

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(creating)



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Mixing Solids and Liquids

What do the words *dissolve* and *solution* have in common? Are their meanings related?

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(analyzing)

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Mixing Solids and Liquids

In scientific terms, why does lemonade get sweeter as you add more sugar?

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(understanding)



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Mixing Solids and Liquids

What happens when too much of a solid, such as salt, is added to a liquid?

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(remembering)

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Mixing Solids and Liquids

How can two boxes of cereal with the same volume have different weights?

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(applying)

What might happen if any of the properties of a volleyball changed?



If you sprinkled ground pepper on top of water, would you have a mixture, a solution, or a suspension?



How would you separate the different substances in a bowl of chocolate-chip ice cream?



Why isn't a mixture of oil and water a solution?

What are two results that can happen when liquids are mixed? Give an example of each.



Why do you think scientists refer to atoms as the *building blocks of matter*?

Would you want to study chemicals and the ways they interact when mixed? Why or why not?