

## Matter of Fact Notes Answer Key

1. Matter is anything that has mass and takes up space.
2. An atom is the smallest component of an element.

Examples:

$H$ Hydrogen	$N$ Nitrogen	$Na$ Sodium
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3. A molecule is the smallest particle of a pure substance that has the properties of that substance. Also known as two or more atoms of the same type joined together by chemical bonds.

Examples:

$N_2$ Nitrogen Gas	$H_2$ Hydrogen Gas	$O_2$ Oxygen Gas
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4. A compound is a substance made up of atoms of at least two different elements. There are relatively few chemical elements, but there are millions of chemical compounds.

Examples:

$H_2O$ Water	$NH_4^+$ Ammonium	$NO_3^-$ Nitrate
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5. All compounds are molecules, but not all molecules are compounds. Explain why you think this statement is true or false.

Answers may vary. Oxygen gas  $O_2$  and Nitrogen gas  $N_2$  are not considered compounds because they are each composed of the same element. Water  $H_2O$  is a compound because it is composed of more than one element.

6. A chemical formula is a concise written description of the components of a chemical compound. It identifies the elements in the compound by their symbols and describes the number of atoms of each element with subscripts. No subscript is used if one atom of an element is present.

Example:

$C_6H_{12}O_6$ Glucose
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