

# Compounds, Chemical Formulas, and Covalent Bonds (Chapter 11, section 2)

Name \_\_\_\_\_

Period \_\_\_\_\_

1. A \_\_\_\_\_ is a chemical bond formed when two atoms share valence electrons.

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2. Between what kinds of atoms do covalent bonds usually form?

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3. a) How can you tell how many covalent bonds a nonmetal atom can form? Why is hydrogen an exception?

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b) Draw a water molecule, showing the valence electrons and circle the covalent bonds. Do the same for a hydrogen molecule.

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4. a) A \_\_\_\_\_ is a covalent bond in which atoms share two pairs of electrons.

.....  
b) Draw a carbon dioxide molecule, showing the valence electrons and circle the covalent bonds.

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5. a) A \_\_\_\_\_ is a covalent bond in which atoms share three pairs of electrons.

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b) Draw a nitrogen molecule, showing the valence electrons and circle the covalent bonds.

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6. A \_\_\_\_\_ is a compound formed by the sharing of valence electrons.

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7. What are general properties of covalent compounds?

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8. A \_\_\_\_\_ is a neutral group of atoms joined by covalent bonds.

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9. a) A \_\_\_\_\_ is a molecule that has a partial positive end and a partial negative end due to unequal sharing of electrons.

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b) Why does this happen?

.....  
c) Draw a water molecule showing the unequal pull on the atoms and the resulting charges. Use arrows to show which way the electrons are pulled.

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10. Explain how polar bonds allow sugar to dissolve in water.

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11. A \_\_\_\_\_ is a molecule in which the electrons are shared equally and does not have oppositely charged ends.

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b) Draw a carbon dioxide molecule, showing the equal pull of the atoms.

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12. A \_\_\_\_\_ is a combination of symbols that shows the ratio of elements in a compound.

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13. a) What does a subscript in a chemical formula tell you?

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b) What does it mean if a symbol has no subscript?

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14. What is the chemical formula for carbon dioxide and what does the formula tell you about the ratio of the two elements?