Name _____ Date _____

Combining Atoms and Molecules

Lesson 1 How Atoms Form Compounds

Grade 8 Science Content Standards—3.a: Students know the structure of the atom and know it is composed of protons, neutrons, and electrons. Also covers: 3.b, 3.f

Skim *Lesson 1 of your book. Predict four topics that might be discussed.*

1. _____
2. _____
3. _____
4. _____

Review Vocabulary

Define ion *using your book or a dictionary.*

ion _____

New Vocabulary

Use your book to define the following terms.

compound _____

chemical formula _____

molecule _____

chemical bond _____

ionic bond _____

valence _____

covalent bond _____

Academic Vocabulary

Use a dictionary to define bond. *Then use it in a sentence to show its scientific meaning.*

bond _____

_____

Name _____ Date _____

Main Idea

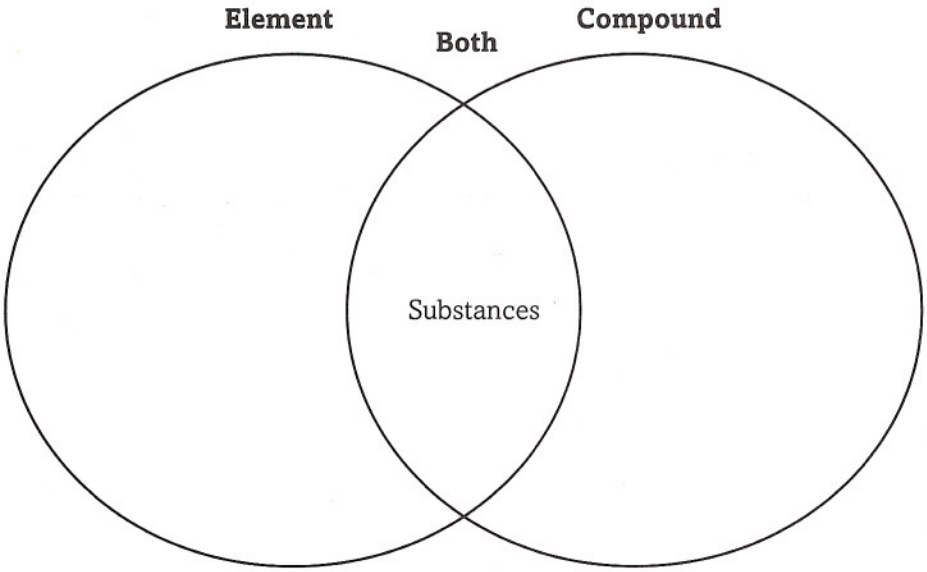
What is a compound?

I found this information on page _____.

Details

Compare elements *with* compounds *by using the phrases to complete the Venn diagram.*

- made of more than one kind of atom
- about 100 kinds exist
- include water and table sugar
- include gold and carbon
- made of only one kind of atom
- can be described by a chemical formula



I found this information on page _____.

Identify *two things a* chemical formula *tells you about a compound.*

Chemical symbols indicate

_____

_____

_____.

H_2O_2

Subscript numbers indicate

_____

_____

_____.

SUMMARIZE IT

Summarize two main ideas of the above sections.

_____

_____

_____

Name _____ Date _____

Lesson 1 How Atoms Form Compounds (continued)

Main Idea

Details

What is a compound?

I found this information on page _____.

Distinguish *between the properties of the elements sodium and chlorine and the compound that they form.*

sodium	+	chlorine	=	sodium chloride
_____		_____		_____

Ionic Bonds and Ionic Compounds

I found this information on page _____.

Sequence *the steps in the formation of lithium fluoride.*

A lithium atom transfers _____ to a fluorine atom.

↓

The lithium atom becomes a _____, and

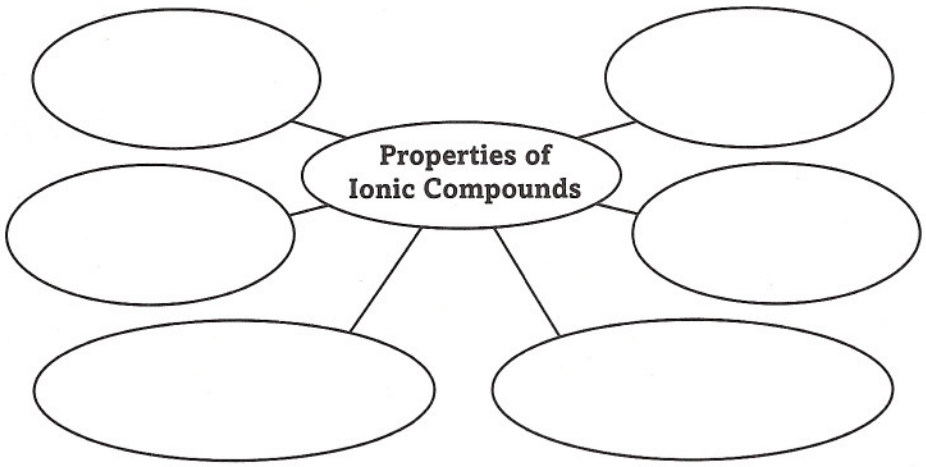
the fluorine atom becomes a _____.

↓

The two atoms form an _____.

I found this information on page _____.

Identify *the 6 properties of ionic* compounds.



Summarize It

Summarize the main ideas of the above sections.

_____

_____

_____

Name _____ Date _____

Lesson 1 How Atoms Form Compounds (continued)

Main Idea | **Details**

Ionic Bonds and Ionic Compounds

I found this information on page _____.

Summarize *what can be learned about an element from its* Lewis dot diagram.

_____

_____

Model *the arrangement of the valence electrons of different elements by constructing a Lewis dot diagram for each element below.*

Lithium	Beryllium	Boron	Carbon	Nitrogen	Oxygen	Fluorine	Neon

I found this information on page _____.

Define noble gas, *and explain why noble gases are stable.*

A noble gas is _____

_____.

A noble gas is stable because _____.

Covalent Bonds—Sharing Electrons

I found this information on page _____.

Identify *five properties of* covalent compounds.

1. _____
2. _____
3. _____
4. _____
5. _____

SUMMARIZE IT

Summarize the main ideas of the above sections in three bullet points.

_____

_____

_____

Name _____ Date _____

Main Idea

Details

Covalent Bonds—Sharing Electrons

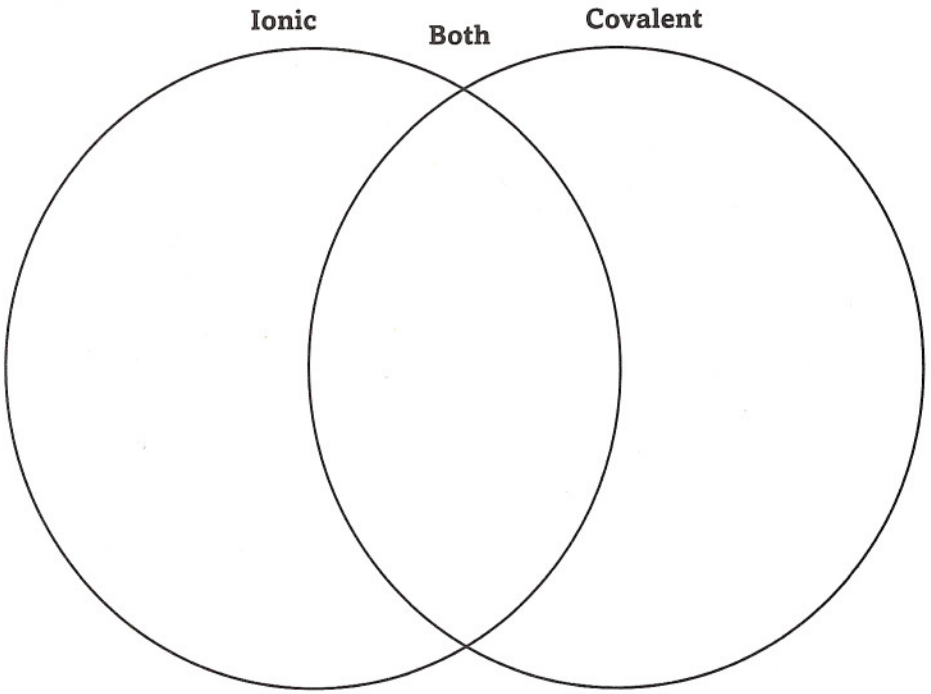
I found this information on page _____.

Organize *information about the* types of covalent bonds *by filling in the table below.*

Type of Covalent Bond	Description	Example
Single		H_2
Double		
Triple		

I found this information on page _____.

Compare and contrast ionic bonds *and* covalent bonds *by completing the Venn diagram below with at least six facts.*



SUMMARIZE IT

Summarize two main ideas about covalent bonds with two bullet points.

_____

_____