

Comparing Chemistry Concepts

Engage

1. Look at the graphic below.
2. In the 6th grade you had several lessons about this graphic.
3. Work with a partner and write down anything you can remember about this graphic.





Explore


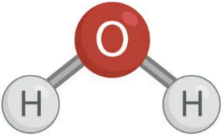
Materials: Copy of the Periodic Table

What To Do:

1. Use the copy of the Periodic Table to identify the names of the following substances.
2. Leave the third column blank for now.

Substance	Name	What the Rule Says
		
		

3. Identify the names of the substances in these groups.

Substance	Names	What the Rule Says
		
		

4. Look at the following rules and identify what each substance is called.

Rule 1 An ATOM is the smallest unit of an element.



Rule 2: A MOLECULE is formed when two or more atoms are chemically joined.

5. In the third column write atom or molecule according to what the rule says.


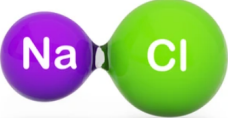


6. Use the copy of the Periodic Table to identify the names of the following atoms.

7. Leave the third column blank for now.

Atom	Name	What the Rule Says
		
		

8. Identify the names of the substances in these groups.

Atoms	Names	What the Rule Says
		
		



9. Look at the following rules and identify what each substance is called.

Rule 1: An ELEMENT contains one kind of atom.



Rule 2: A COMPOUND contains more than one kind of atom.

10. Use the copy of the Periodic Table to identify the following elements.

11. Leave the third column blank for now.

Element	Name	What the Rule Says
		
		

12. Identify the names of the elements in these groups.

Groups of Elements	Name	What the Rule Says
		
		

13. Look at the following rules and identify what each element or groups of elements are called.

Rule 1: A SYMBOL is a one or two letter abbreviation for an element.

Rule 2: A FORMULA represents a molecule or compound and uses symbols and subscripts.



CHEMISTRY CONCEPTS	Explain	<input type="text"/>
	ATOM	
	MOLECULE	
	ELEMENT	
	COMPOUND	
	SYMBOL	
FORMULA		

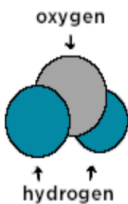
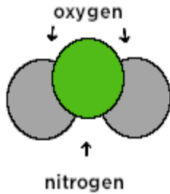
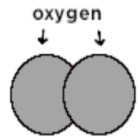
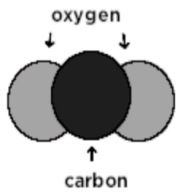
Elaborate

1. Read through the Word Bank and the fill in the blank questions below.
2. Watch the video “Difference Between a Molecule & a Compound at <https://www.youtube.com/watch?v=54GaGIDHwxY> without trying to answer any of the questions.
3. Read through the Word Bank and questions again.
4. Watch the video and fill in the blanks.

Word Bank			
molecules	two	same	
atoms	compound	different	

1. A molecules is formed when _____ or more atoms join together.
2. A compound is a molecule that contains at least two _____ elements.
3. A molecule can consist of two or more of the _____ element joined together.
4. A compound must have at least two _____ of different elements joined together.
5. All _____ are molecules but not all _____ are compounds.

4. Explain your answer in the bottom box.

			
Molecule Compound Both	Molecule Compound Both	Molecule Compound Both	Molecule Compound Both

period _____

EXIT TICKET

Comparing Chemistry Concepts

Use what you have learned in this lesson to answer the question below.

Question:

Are elements and compounds the same thing?

Claim:

I think

Evidence #1

An element -

Evidence #2

An element -

Evidence #3

A compound -

Reasoning:

These facts lead to the conclusion that -

Periodic Table of the Elements

Atomic number

Symbol

Atomic mass

— 14

—Si

- 28.005

Silicon -

—Name

Group		Atomic mass										Silicon		Name		18	
1	2											13	14	15	16	17	2
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1	2											5	6	7	8	9	

Mass numbers in parentheses are those of the most stable or most common isotope.

Lanthanide Series

Actinide Series

58 Ce 140.12 Cerium	59 Pr 140.908 Praseodymium	60 Nd 144.24 Neodymium	61 Pm (145) Promethium	62 Sm 150.36 Samarium	63 Eu 151.97 Europium	64 Gd 157.25 Gadolinium	65 Tb 158.925 Terbium	66 Dy 162.50 Dysprosium	67 Ho 164.930 Holmium	68 Er 167.26 Erbium	69 Tm 168.934 Thulium	70 Yb 173.04 Ytterbium	71 Lu 174.967 Lutetium
90 Th 232.038 Thorium	91 Pa 231.036 Protactinium	92 U 238.029 Uranium	93 Np 237.048 Neptunium	94 Pu (244) Plutonium	95 Am (243) Americium	96 Cm (247) Curium	97 Bk (247) Berkelium	98 Cf (251) Californium	99 Es (252) Einsteinium	100 Fm (257) Fermium	101 Md (258) Mendelevium	102 No (259) Nobelium	103 Lr (262) Lawrencium