

Unit 4

- Periodic Table
- Lewis Notation
- Chemical Bonding



Competencies

The student will be able to:

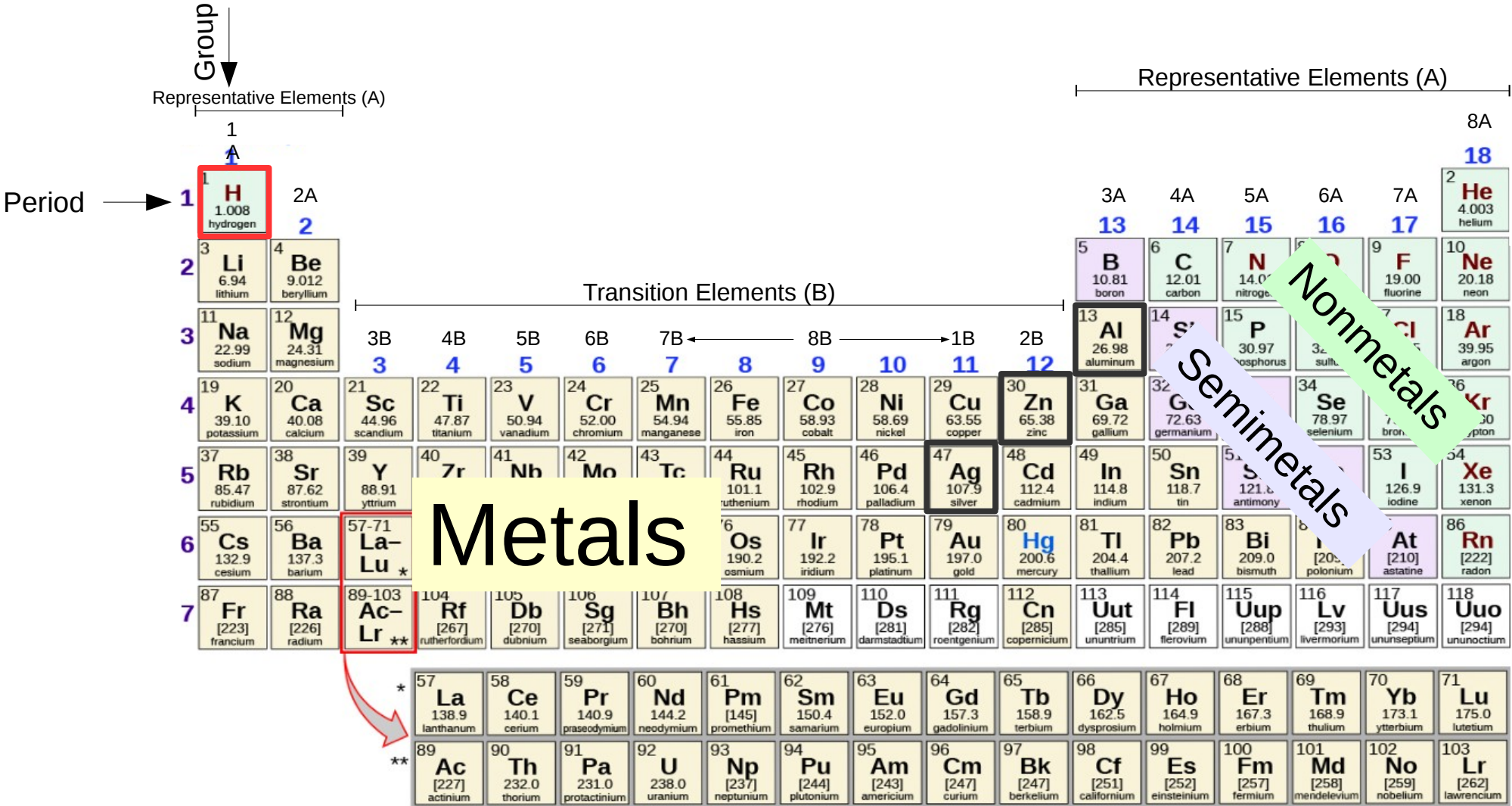
Periodic Table:

- define periods and families (groups)
- describe the difference between “A” groups (representative elements), “B” groups (transition metals).
- name and identify elements which belong to the alkali metals, halogens and noble gases.
- define metal, non-metal and describe their location in the periodic table and give their physical/chemical properties.
- describe periodicity of properties (atomic size)

Chemical Bonding:

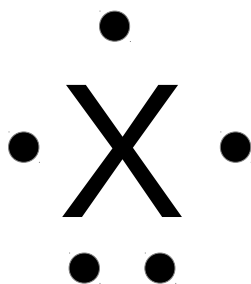
- **use the periodic table to describe how the most common ions of elements form.**
- **given the constituent elements of a compound, determine the ratio in which the atoms will combine in order to form a compound.**
- determine which electrons are valence electrons for a given element.
- **draw the Lewis structure of any given element with the help of a periodic table.**
- **predict a formula of an ionic compound when given the charges of the ions forming the compound**
- **differentiate between covalent and ionic bonds and describe how the position of an element in the periodic table determines the type of bonding the element uses.**
- **use the Octet Rule**
- **draw Lewis structures for simple molecules that contain, single, double, and triple bonds, binary compounds.**

Periodic Table



Source: Modified by Stefan Bracher, based on the periodic table licensed by Rice University under a Creative Commons Attribution License (by 4.0).
 Download for free at <http://cnx.org/contents/abe37363-0fb4-4018-868f-8ccc3ce7cad0@4/The-Periodic-Table>

→ Do Unit IV – Problem 1-4



Examples:

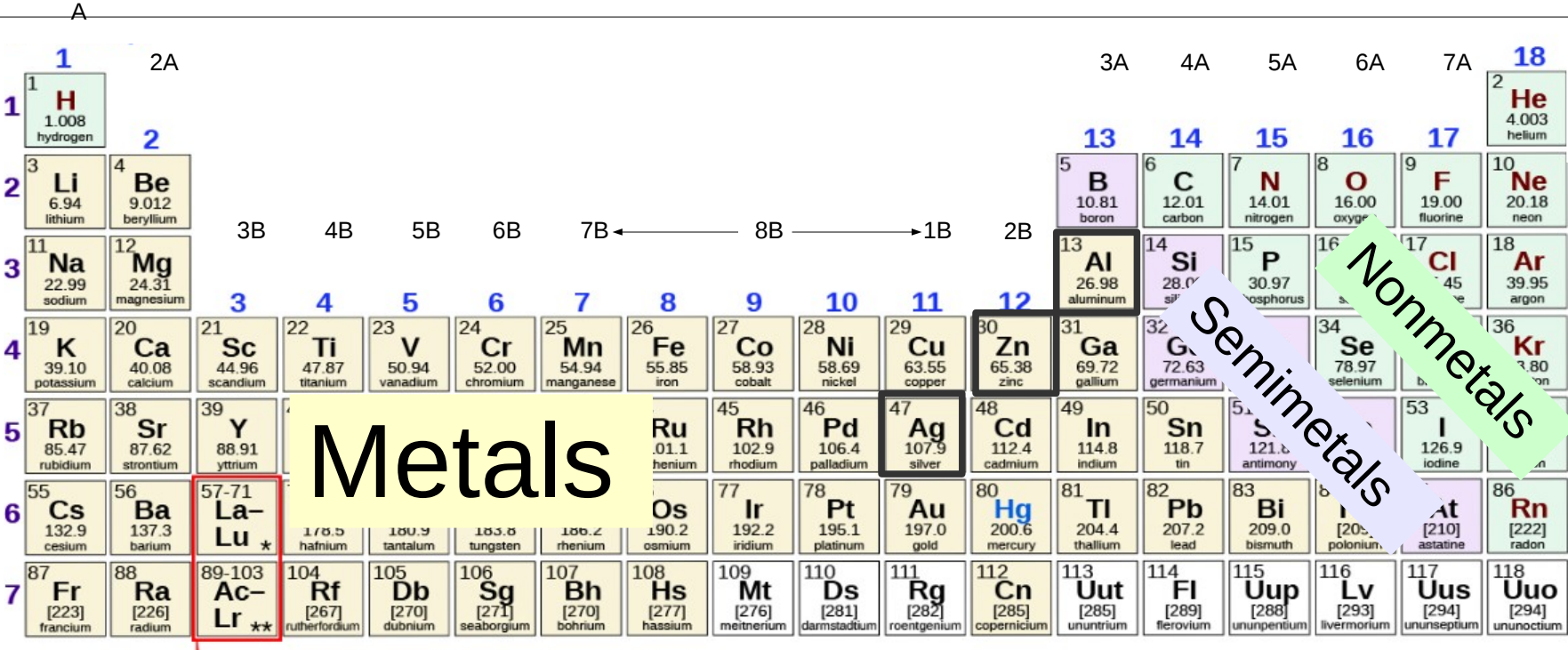
Na

C

He

→ Do Unit IV – Problem 5

Octet Rule



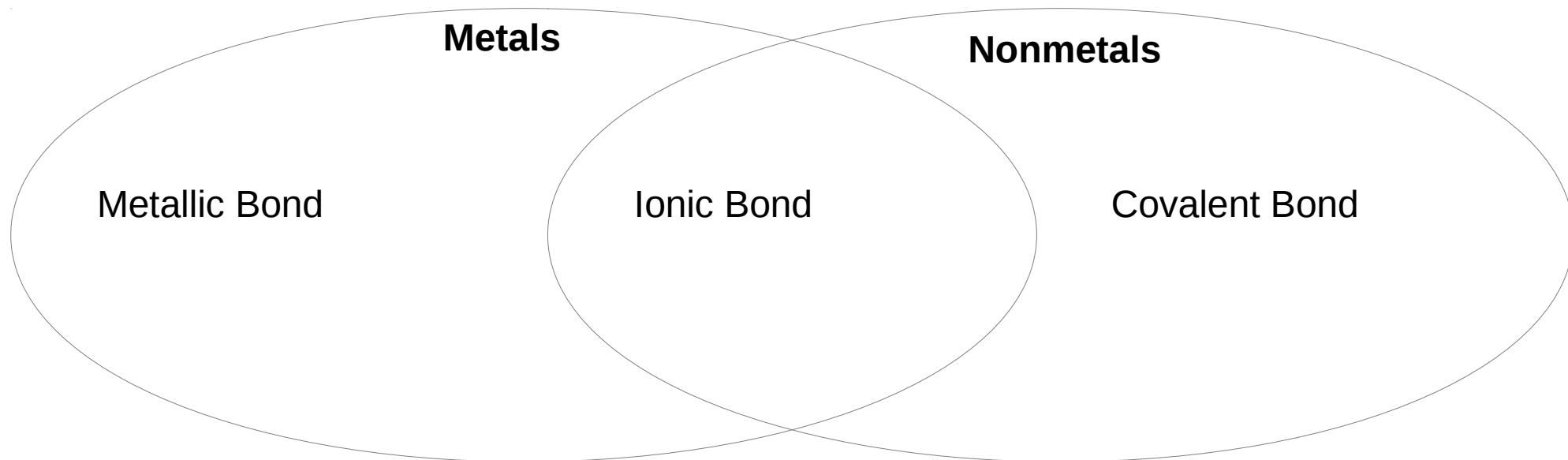
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Metals

Semimetals

Nonmetals

→ Do Unit IV – Problem 7-8



Examples:

Na Na

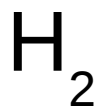
Na Na

Na Na

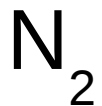
Na Cl

H O

Diatomic Molecules



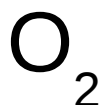
Have



No



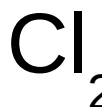
Fear



Of



Ice



Cold



Beer



Image: "Ice Fresh" by Falk Lademann
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Review

Clicker Review Activity : Sec 4 – Valence Electrons, Compounds
Sec 4 – Space Race – Lewis Structure

<http://b.socrative.com>



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	<input type="button" value="SIGN IN"/>
	— or —
	<input type="button" value="g+ Sign in with Google"/>
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Additional Resources

- Periodic Variations in Element Properties, OpenStax „College Chemistry“
<http://cnx.org/contents/havxkyvS@9.111:bodXjoRx@5/Periodic-Variations-in-Element>
- Chemical Bonding and Molecular Geometry, OpenStax „College Chemistry“
http://cnx.org/contents/havxkyvS@9.111:ihFfre_6@4/Introduction