



Learning Guide # 6: Ionic Compounds

BIG IDEA: The electron arrangement of metals and non-metals in Ionic Compounds affects their chemical nature.

Fundamental Knowledge (I know)

- ☐ How proton number and number of electrons affect ionic compound formation
- ☐ How the electric charge of an element affects that ratio between elements when they form ionic compounds
- ☐ Parts of an element (protons, neutrons and electrons)
- ☐ How to write the correct chemical formulae and name for ionic compounds

Curricular Competencies (I can)

	Proficiency Scale Teacher and Student self assessment (Circle one)	Evidence (How do you know?)
I can: Formulate physical or mental theoretical models to describe a phenomenon. (C 1.)	Emerging (EMG) Initial Understanding Developing (DEV) Partial/Near Complete Understanding Proficient (PRF) Complete Understanding Extending (EXT) Sophisticated Understanding	
Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled. (E 3.)	Emerging (EMG) Initial Understanding Developing (DEV) Partial/Near Complete Understanding Proficient (PRF) Complete Understanding Extending (EXT) Sophisticated Understanding	



Instructions To help guide your learning, make your way through the activities in Option 1, Option 2, or Option 3. You may “mix and match” between the different Option columns.

TOPIC	OPTION 1	OPTION 2	OPTION 3
Ions	A. Find a website or video that explains how atoms become ions. Create a visual that <u>explains the differences between atoms and ions</u> . Include examples using Bohr models.	A. Draw Bohr models for the ion structure of the elements in the 2 nd <u>or</u> 3 rd period of the periodic table of elements. Remember to include the charge! *Note: Silicon and Carbon have two possible ions!	Choose your own adventure! Pick up a planning sheet from the Science Kiosk. Create a plan! Make sure you read through the first page of this LG, as you will need to design ways to learn/practice and show your understanding of the topic(s) and skill(s) (competencies.) You will need to have a teacher approve your plan before beginning the LG.
Drawing Basic Ionic Compounds	B. Use class notes or the video “BCLN - Bohr Models for Ionic Compounds” on YouTube for a reference. Draw 5 ionic compounds using Bohr or Lewis models (for each drawing, pick a metal and a non-metals from periodic table elements 1-20 for this activity).	B. Use class notes, or information from the textbook or internet to draw the following Ionic compounds with Bohr or Lewis models on a piece of paper: LiF, NaCl, BeO, MgCl ₂ , Li ₃ P, Be ₃ N ₂	
Ionic Compound – Basics	C. Complete the practice worksheet “Ionic Compound Basics”	C, D, and E. Create an informational piece such as a pamphlet that explains to someone new to chemistry how to name and create formulas for ionic compounds. This includes the basics, as well as the multivalent elements and polyatomic ions. Please see the criteria sheet called “ Ionic Compounds Project ” on the website to complete this activity.	
Ionic Compounds – Multivalent Elements	D. Complete the practice worksheet “Ionic Compounds with Multivalent Elements”		
Ionic Compounds – Polyatomic Ions	E. Complete the practice worksheet “Ionic Compounds with Polyatomic Ions”		
Lab	F. Lab 6.1A (Sci 10): Comparing Chemical Reactions- <u>After writing your own hypothesis</u> , complete Lab 6.1A “ Comparing Chemical Reactions ” from page 257 of the SCIENCE 10 text. (See website.)		
Self Assessment	Reflect on the Fundamental Knowledge and Curricular Competencies. Use the rubric and make goals to improve for your next learning guide.		
Interview or Quiz	See you teacher for an interview or to have a quiz slip signed for the test center. Bring your work and staple it to your quiz when complete.		

Resources can be found at www.THSSscience.com or the Science Kiosk

User: **THSS**

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