



Learning Guide # 6: Covalent Compounds

BIG IDEA: The electron arrangement of elements impacts their ability to form Covalent Compounds.

Fundamental Knowledge (I know)

- Recognize Covalent Compounds
- Name and write the formula for Covalent Compounds
- Compare Ionic and Covalent Compounds
- Model & Draw Bohr Models for covalent bonds (including Halogens)
- Model & Draw Lewis Diagrams for covalent bonds and all diatomic bonds
- Compare and Contrast Bohr Models and Lewis Diagram

Curricular Competencies (I can)

| | Proficiency Scale Teacher and Student self- assessment (Circle one) | Evidence (How do you know?) |
|---|--|---------------------------------------|
| I can: Construct, analyze and interpret models and diagrams. (Bohr models, Lewis Dot Diagrams) (P.A.D.I 4) | Emerging (EMG) Initial Understanding Developing (DEV) Partial/Near Complete Understanding Proficient (PRF) Complete Understanding Extending (EXT) Sophisticated Understanding | |
| Communicate ideas using scientific language and representations. (Naming and writing formulas) (C 2) | Emerging (EMG) Initial Understanding Developing (DEV) Partial/Near Complete Understanding Proficient (PRF) Complete Understanding Extending (EXT) Sophisticated Understanding | |
| Transfer and apply learning to new situations. (Comparing types of chemical bonds) (A.I 2) | Emerging (EMG) Developing (DEV) Proficient (PRF) Extending (EXT) | |

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 | |
|----------------------------|---|--|---|---|
| Drawing Covalent Compounds | A. Use the Youtube video “GCSE Chemistry - Covalent Bonding #16” https://www.youtube.com/watch?v=5I_1jRGSR9E as a reference. On a sheet of paper, draw the following covalent compounds using Bohr or Lewis models. HF, H ₂ O, H ₃ P, CO ₂ , H ₂ O ₂ , CH ₄ On the same sheet of paper: <ul style="list-style-type: none"> - Define what a diatomic molecule is - List all diatomic molecules that can form (google the list) - Draw one diatomic molecule | A and B. Create a visual on Covalent Compounds (video, poster, model, brochure, slideshow) where you: <ul style="list-style-type: none"> - Explain how a covalent bond works and how it can form between atoms (include drawings using Bohr or Lewis models) - Explain how to name and write the formula of a covalent compound using 5 examples - Include information about diatomic molecules, and a list of all possible diatomic molecules - Compare ionic and covalent bonds. - Provide examples of materials of where Covalent compounds can be found. | 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. | |
| | Naming and Creating Formulas for Covalent Compounds | | | B. Complete the worksheet “ Naming and Creating Formulas for Covalent Compounds ”. |
| | Identifying Compound Types for Naming and Creating Formulas | | | C. Complete the worksheet “ Covalent and Ionic Compounds – Mixed ” |
| Lab | Lab: Complete the “Comparing Ionic and Covalent Compounds” Lab. The lab procedure and guided lab report are posted on THSSscience.com | | | |
| 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**

Password: **science**