

Charged Atoms in Lewis Structures

Unit: Covalent Bonding & Molecular Geometry

NGSS Standards/MA Curriculum Frameworks (2016): HS-PS1-2

Mastery Objective(s): (Students will be able to...)

- Draw Lewis structures in which one or more atoms has a formal charge.

Success Criteria:

- Lewis structures show the correct number of bonds.
- Lewis structures show the correct number of unpaired electrons in the correct locations.
- Individual charges are assigned correctly. (Positive charges on least electronegative atom, negative charges on most electronegative atom, *etc.*)
- Total charge adds up to the correct value.

Tier 2 Vocabulary: bond, charge

Language Objectives:

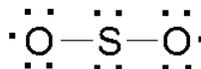
- Explain how charges are assigned to Lewis structures.

Notes:

Lewis structures show the shape of a molecule and how the atoms share electrons with each other. If a molecule exists, that means it must have a Lewis structure.

If you can't find a way to draw the Lewis structure for a molecule using neutral atoms, you may need to take electrons away from one atom and distribute them to other atoms, creating atoms with charges.

For example, consider the sulfur dioxide (SO_2) molecule. Sulfur and oxygen both have 6 valence electrons and need two bonds. If you draw the following:

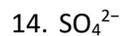
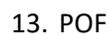


sulfur has enough bonds, but each oxygen needs one more electron.

Use this space for summary and/or additional notes:

Homework Problems

Draw a correct Lewis structure for each of the following compounds.



Use this space for summary and/or additional notes: