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Crash Course Chemistry #24: Bonding Models and Lewis Structures

Name: _____ Date: _____

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1. In science, a _____ is anything that represents something else, whether it's physical or conceptual.
2. The _____ model represents atoms as spheres connected by sticks to show bonds.
3. In a _____ bond, electrons are shared between two atoms.
4. A bond forms because atoms stay close together where their _____ is minimized.
5. The electrons in a bond are in constant _____ around the nuclei.
6. A _____ structure uses lines to show bonds and dots to represent valence electrons.
7. The _____ rule states that atoms are most stable with eight electrons in their outer shell.
8. Valence electrons that are shared between two atoms are called _____ pairs.
9. Valence electrons that are not shared and remain on one atom are called _____ pairs.
10. A _____ covalent bond involves two pairs of electrons being shared.
11. A _____ covalent bond involves three pairs of electrons being shared.
12. In an _____ bond, electrons are transferred from one atom to another.
13. The Lewis model was improved upon by applying the principles of _____ mechanics.
14. Linus Pauling described chemical bonds as overlaps of _____ clouds.
15. Even when scientific models are imperfect, they are useful because they can be _____ upon to create better models.

Crash Course Chemistry #24: Bonding Models and Lewis Structures KEY

1. In science, a **model** is anything that represents something else, whether it's physical or conceptual.
2. The **ball-and-stick** model represents atoms as spheres connected by sticks to show bonds.
3. In a **covalent** bond, electrons are shared between two atoms.
4. A bond forms because atoms stay close together where their **energy** is minimized.
5. The electrons in a bond are in constant **motion** around the nuclei.
6. A **Lewis** structure uses lines to show bonds and dots to represent valence electrons.
7. The **octet** rule states that atoms are most stable with eight electrons in their outer shell.
8. Valence electrons that are shared between two atoms are called **bonding** pairs.
9. Valence electrons that are not shared and remain on one atom are called **lone** pairs.
10. A **double** covalent bond involves two pairs of electrons being shared.
11. A **triple** covalent bond involves three pairs of electrons being shared.
12. In an **ionic** bond, electrons are transferred from one atom to another.
13. The Lewis model was improved upon by applying the principles of **quantum** mechanics.
14. Linus Pauling described chemical bonds as overlaps of **electron** clouds.
15. Even when scientific models are imperfect, they are useful because they can be **built** upon to create better models.

15 Questions

Answer Key Included

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