Student Exploration: Covalent Bonds

Vocabulary: covalent bond, diatomic molecule, Lewis diagram, molecule, noble gases, nonmetal, octet rule, shell, valence, valence electron

Prior Knowledge Questions (Do these BEFORE using the Gizmo.)

There are eight markers in a full set, but Flora and Frank each only have seven markers.
 Flora is missing the red marker, and Frank is missing the blue marker.

What can they do so that each has a full set of markers? Frank can share his red marker

with Flora and Flora can share her blue marker with frank.

Otto and Olivia each have six markers. Otto is missing the purple and green markers, and Olivia is missing the black and brown markers. What can they do so that each has a full set? Olivia can share her purple and green markers with otta and otta can share his black and brown markers with olivia.

Gizmo Warm-up

Just like the students described above, **nonmetal** atoms can share electrons. As you will see in the Covarent Bond's Gizmo, atoms form bonds in this way.





- The outermost electrons in each atom are called valence electrons. How many valence electrons does each fluorine atom have? Each fluorine atom has seven valence electrons.
- Click Pause (!=). Drag an electron from the left atom to the right atom. Click Play. What happens? The electrons that was dragged now orbits both atoms.
- Click Pause, drag an electron from the right atom to the left, and then click Play. What happens now? A pair of electrons now orbit both atoms.

Section 8 1 Forming Chemical Bonds Answer Key

Shasha Hu

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