

SIMULATION: Covalent Bonding

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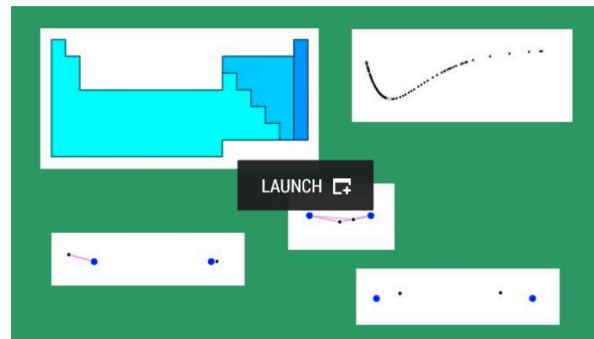
Getting Started

A.) Go to google.com and search “PBS Learning Covalent Bonding” or use this URL address to find the site:

<http://www.pbslearningmedia.org/resource/lsp07.sci.phys.matter.covalentbond/covalent-bonding/>

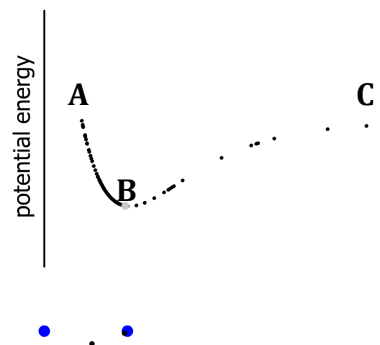
B.) Click Launch.

This media asset was adapted from ChemThink.



Write your answers on a separate sheet of notebook paper or type your answers to the following questions.

- 1.) How is covalent bonding typically explained?
- 2.) Describe the movement of electrons when (pg 2/35):
 - a. The atoms are NOT near each other.
 - b. When you bring the atoms close enough together so that they form a covalent bond.
- 3.) What happens when you drag an atom SLOWLY when the atoms are covalently bonded (pg 3/35)?
- 4.) What happens when you drag an atom around QUICKLY when the atoms are covalently bonded (page 3/35)?
- 5.) What happens when you push one atom VERY close to another atom (page 3/35)? Why do you think this happens: (Hint: Think of Coulombic attraction.)
- 6.) Most people define covalent bonds as atoms “sharing” electrons. Is this really an accurate depiction? Why or why not?
- 7.) Where on the periodic table do we find elements that will form covalent bonds?
- 8.) The graph to the right does not have an x-axis listed or labeled. How should the x-axis be labeled?
- 9.) What is the independent variable on the graph? Dependent variable?
- 10.) Explain what is happening at points A, B, and C at the graph.
- 11.) What is the “bond length” a measure of?



- 12.) Name these formulas:
 - a. N_2O _____
 - b. NO_2 _____
 - c. N_2O_4 _____
 - d. N_2O_3 _____
 - e. NO _____
- 13.) Write the formulas for these names:
 - a. Disulfur dichloride _____
 - b. Sulfur dioxide _____
 - c. Disulfur trioxide _____
 - d. Disulfur monoxide _____
 - e. Sulfur trioxide _____
- 14.) Summary: (Jot down three things you learned about covalent bonding from this tutorial in YOUR OWN WORDS.)
 - a.
 - b.
 - c.