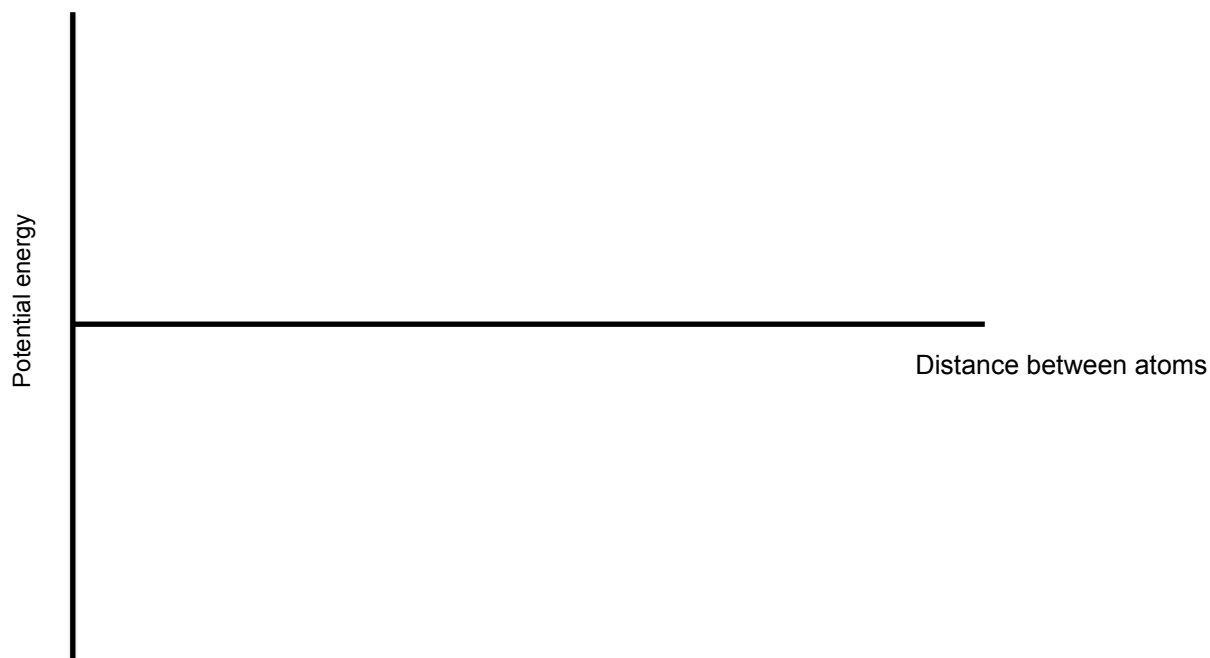


1. If a container with He solid in it is heated (for example by placing the container on a heated block), the solid will melt and then evaporate. Draw a diagram showing how the energy from the container is transferred to the He atoms.

2. Draw a graph showing how the potential energy of a 2 He atom system changes as the He atoms approach each other. Use a solid line for He.

Now, **using the same axes**, and using a dotted line ----- show how the potential energy changes when two Xe atoms approach each other. Explain how and why the two curves differ from each other.



Part II Go to

<http://besocratic.colorado.edu/CLUE-Chemistry/activities/LondonDispersionForce/1.2-interactions-0.html>

And click through to **pages 6, 7 and 8** to the **hydrogen interactions**

Here we are looking at the interactions between two **H atoms** (rather than two He atoms). The controls are very similar to pages 2-4. This simulation shows the formation of an H₂ molecule, by forming a **covalent bond** between the two H atoms.

3. Click on the “show He potential” button. What are the differences between the H potential and the He potential? What do the two curves tell you about the magnitude of the interaction of 2 H atoms compared with 2 He atoms?
4. Using the information from the graphs, which interaction do you think would take the most energy to overcome (the interaction between two He atoms or the interaction between two H atoms)? Please explain your reasoning.