

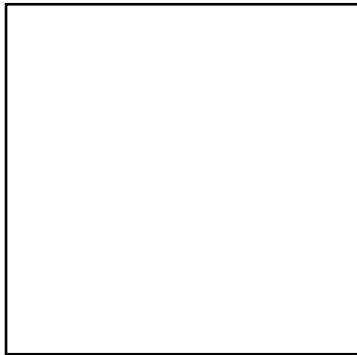
Name: _____ Date: _____ Block: _____

Visualizing Particles during Physical and Chemical Changes

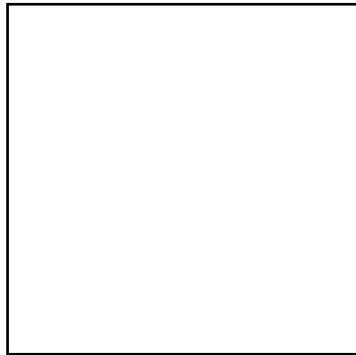
Part 1: Representing Physical Change

A **physical change** occurs when a substance undergoes a change in shape, form or state of matter. No new chemical bonds are formed or broken, thus the **same substance** is present at the end of a physical change as was present at the beginning.

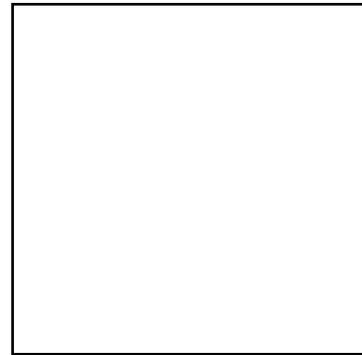
Directions: When one hydrogen atom chemically bonds to an atom of fluorine, the compound hydrogen fluoride is formed. In your box, are molecules of hydrogen fluoride. Your task is to arrange the molecules of hydrogen fluoride to represent the three states of matter: solid, liquid, and gas. First, arrange the molecules as they would appear in solid hydrogen fluoride then draw the molecules in the appropriate box below. Repeat for liquid hydrogen fluoride and gaseous hydrogen fluoride.



SOLID



LIQUID

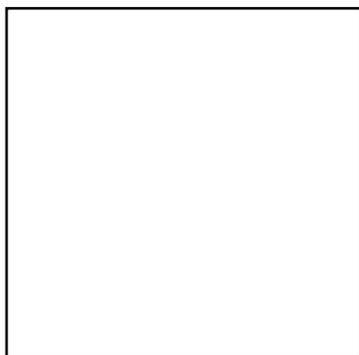


GAS

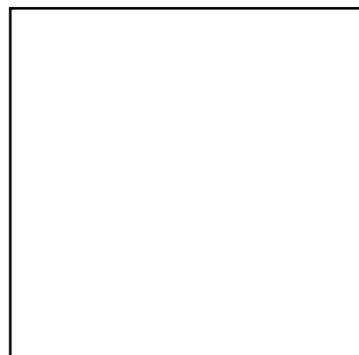
Part 2: Representing Chemical Change

A **chemical change** occurs when chemical bonds are formed and/or broken, thus resulting in the formation of a **different substance**.

Directions: Arrange the molecules of hydrogen fluoride as they would exist in the gas phase. Draw the molecules in the box below labeled "Before Chemical Change". Next, use the molecules of hydrogen fluoride to simulate a chemical change. Draw the resulting particles in the box below labeled "After Chemical Change".



Before Chemical Change



After Chemical Change

Part 3: Summarize

Directions: In your own words, explain the difference between a physical and change. Be sure to use examples to support your explanation.

Summary:

Part 4: The Final Wrap

Directions: Using the molecules of hydrogen fluoride, create a video tutorial that would help a classmate understand the difference between a physical and chemical change. You should include examples of each type of change. The video can be no longer than one minute. Creativity is strongly encouraged. Upon completion of filming your video, submit the video via Google Classroom.