

Molecular Attractions - Webquest

States of Matter

Open up the internet browser and head to the class webpage and click on "LINK 1".

Begin the activity and answer the questions after reading the provided information and manipulating the simulations.

Page 1

1. Describe the motion of the atoms in the gas. Draw a representation of a gas in the box provided.



2. The image shows a seemingly empty glass. Why can't you store a fixed amount of gas in an open container like a glass?



Page 2

3. Describe the movement of the atoms in a liquid. How do they move relative to each other? Draw a representation of a liquid in the box provided.



4. The image shows a glass, half-filled with water. Why does the liquid expand to fill the bottom of the glass?



Page 3

5. Describe the movement and arrangement of atoms in a solid. Draw a representation of a solid in the box provided.



6. The image shows a crystal of rock salt (halite). Why does the solid have a specific shape? Why does it not change shape?



Page 4

7. How will you be able to tell whether the material is a solid, liquid or gas?
(Hint: Think about how atoms move relative to each other in the different states of matter.)
8. Which attraction level would allow a material to be a gas at a very low temperature?
9. What is the role of charge on a material's state of matter at a medium temperature? Explain your answer.

Intermolecular Attractions and Boiling Point

Open up the internet browser and head to the class webpage and click on "LINK 2".

Begin the activity and answer the questions after reading the provided information and manipulating the simulations.

Page 1

Polar molecules _____ share electrons evenly and will have a _____ charge that is a red color and a _____ charge that is a blue color in the activity. Draw how a polar molecule will be represented in this activity:

Nonpolar molecules _____ share electrons evenly and will have _____ charge that is a _____ color in the activity. Draw how a nonpolar molecule will be represented in this activity:

Page 2 1. Which molecules do not attract to each other? Explain and draw a picture depicting your choice.

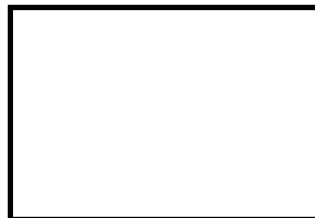


2. Which molecules are attracted to each other? Explain and draw a picture depicting your choice(s).



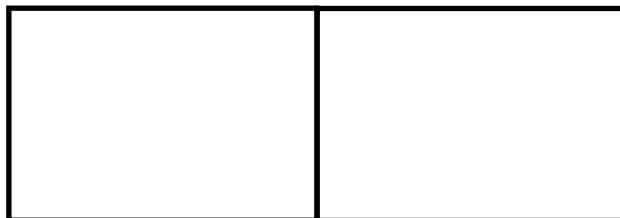
Page 3 3. Which type of intermolecular attraction is strongest? How could you tell?

4. Why is your choice above the strongest attraction? Draw a picture of your choice.



Page 4 5. Which liquid boiled first?

6. How could you tell when the liquids boiled? Draw a picture of both materials at 600K.



7. Rubbing alcohol is less polar than water. Both are liquids at room temperature. Which one boils first? Why?

