

Water Handout name: _____

Because I am absent today, class moves forward anyway. Take out a text book and open it to page 475. Wow, we're already at 475! We begin our study of water today, which is mostly review, but focuses a lot of chemistry as it pertains to dihydrogen monoxide, or water.

Please answer all the questions, fill in all the blanks.

1. Which side of a water molecule is more negative, which is more positive?
2. Because water is so polar (it has _____ symmetry, not radial), the molecules are attracted to each other. The bond that causes this attraction between molecules is called _____ bonding.
3. Water sticks to itself, but not to air. This gives water the first property in the text, which is a high _____. Bugs walk on water because of this property. Look at the drawing on page 477 top right. What do those arrows represent? _____
4. A chemical that breaks down these intermolecular bonds is called a _____
5. Soap is an example. What would happen to a water strider bug (page 476) if you put a few drops of soap into the pond near him? _____
_____ .
6. Specific Heat Capacity is a constant. For water it is: _____
Describe in words what that actually means: _____ .
7. When a molecule of water gains enough kinetic energy to break the hydrogen bonds it has with its neighboring molecules, the water is said to _____. This happens at any temperature that water is a liquid. When ALL the molecules have enough kinetic energy to escape, the water is _____.
8. The normal boiling point for water in Kelvin is _____, and in centigrade _____
9. What's the "normal" mean? _____
10. Steam can be changed into a liquid. That's called _____
11. What is the formula used to determine how many joules it takes to melt ice? _____
How about to vaporize water into steam? _____

12. Ice is less dense than water. Explain how this is possible. _____

(use the number 6 in your explanation)

13. Take a few moments to put your self back together here.

14. Water and table salt mix together. Which is the SOLVENT _____ and which is the SOLUTE _____ ?

15. The solution process is when an polar or ionic compound gets dissolved into a polar solvent. (salt in water, sugar in water). Look at page 483. Describe the directions of the water molecules to the ions. _____
_____.

16. Electrolytes _____ electricity. Non-electrolytes _____.

17. To be an electrolyte, a solution must have _____ dissolved into it.

18. Aqueous sodium chloride _____ (is or is not) an electrolyte?

19. Sugar water is or is not an electrolyte? _____

20. Circle the compounds that would be electrolytes when dissolved in water:

copper (II) sulfate, magnesium chloride, carbon dioxide, glucose, HCl, NaCl

21. What is the difference between a STRONG electrolyte and a WEAK one?

22. Water of Hydration refers to hydrated crystals. Name two that we have used in lab: _____ and _____

23. Sodium sulfate decahydrate (page 486) is a hydrated ionic compound. What is the molar mass of this compound? _____
What is the % composition by mass of water in this compound?

There is NO homework Tuesday night. This is to be handed in for a CLASSWORK grade. Mr. Arbuiso WILL return on Wednesday, with your celebrations in hand.

Be well behaved (as usual), make me proud. My absence should NOT mean that chemistry stops, or that you have nothing to learn. You are smart, be smart.