

Modeling Water Directions

1. Each student should take out one molecule of water, (the red and white mickey mouse shaped object). While observing the molecule of water, answer questions #1-4 on your answer sheet.
2. Each student should take out one more molecule of water (for a total of two per student). See if your hypothesis was supported by exploring the interactions between the two water molecules. Answer question #5 on your answer sheet.
3. Break the hydrogen bond between the two water molecules by pulling them apart.
4. Now try to break the covalent bond between a hydrogen and oxygen atom of one water molecule using your fingernails. Answer questions #6-7 on your answer sheet.
5. With your partner, arrange five water molecules in a ring so they stay together. Draw this arrangement on your answer sheet for #8.
6. With your partner, take out the blue and green balls. Together these represent sodium and chlorine. Answer questions #9-12 on your answer sheet.
7. See if your hypothesis (question #12) was supported by exploring the interactions between the water molecules and the sodium chloride compound. Answer questions #13-14 on your answer sheet.
8. Try “dissolving” the sodium chloride using the water molecules found in your kit. **Hint:** Surround the sodium and the chlorine with the water molecules so they are separated from each other but held in one big mix of water molecules.
9. Sketch a picture of how sodium chloride and other polar substances are dissolved in water on your answer sheet for #15.
10. Watch the demonstrations on cohesion, adhesion, capillary action and surface tension. Answer the questions #16-19 on your answer sheet.
11. Pick up the worksheets for the **Properties of Water Lab** found at the front of the room, collect a bin of lab supplies and get started performing all four mini-investigations.



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