WATER

Define:

Cohesion:

Adhesion:

Surface tension:

Question: What happens to a drop of water placed on a piece of wax paper? What if you slant the paper? What happens if you pull a bent paperclip upwards through it? Try it with materials provided.

Hypothesis:

Results:

Explain the results in terms of cohesion, adhesion, and surface tension.

Extend your thinking: How does water behave on a waxed car or a windshield treated with Rainex? How does a raindrop behave when it hits concrete? Use the definitions above in your explanation.

Video Review (7:41): http://www.youtube.com/watch?v=CT4pURpXkbY&noredirect=1

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1) Draw water molecules and their hydrogen bonds in liquid water and in ice. What is the key difference in the interactions between molecules in frozen vs liquid water? Use the model kit to demonstrate both.

2) Is water containing NaCl more or less likely to freeze at 0˚ C than water without NaCl? Why? Use the model kits to demonstrate. Sketch it below.

3) Some fish in the Antarctic have proteins in their blood that prevent freezing (similar "antifreeze proteins" are also found in some plants and insects). These proteins bind to newly formed ice crystals and prevent their expansion. What key step in ice formation might be blocked by these antifreeze proteins?

Study Tips:

1. Make your own vocabulary list of all the bold faced words in the text chapters covered in class. Write them down by hand. Physically writing them down will help you remember the words and definitions better than just reading them or typing them.

2. Look at any supplementary material available with your textbook online.

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Instructor's Notes:

1. Surprisingly, many students have never taken the time to simply "observe" the behavior of water. This short activity gives them an opportunity to do so while mastering the vocabulary related to water and it's behavior.

2. We use the Molymod Ice model kit: MKO-123-26-Ice-26 atoms.

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