Supers	saturation	Name/F	er.
-	: How do we tell the difference betw		
Pre-Lab	_		·
1. W	hat is a solution?		
2. Ho	ow are solubility and temperature rela	ited?	
3. De	escribe the difference between unsate	urated, saturated, and supersat	urated.
Introduct			
	ility of a solute is defined as the maxi ility of most substances increases as		will dissolve in a given amount of solvent.
NOT disso			dered to be saturated – additional solute will olution it is considered unsaturated –
solution. additional	solute is added to the solution, some	nder certain conditions and by f thing remarkable occurs. In thi	n amount of solute is dissolved in the ollowing a specific set of steps. When is lab you will be creating a supersaturated atted, unsaturated and supersaturated.
<u>Equipme</u>	<u>ent</u>	<u>Supplies</u>	FI
Test tube Test tube holder 250 or 400 mL beaker Bunsen burner		sodium sulfate distilled water ice	
Procedu	<u>re</u>		
1. Place	about ${\bf 5}~{\bf g}$ of sodium sulfate into a CL	.EAN test tube. Add about 10 n	nL of distilled water.
	he test tube in a test tube holder. He		
	hile one group member is heating the	_	·
3. Place here.	the test tube in the test tube rack. A	dd one small crystal to the warn	ned solution. Record your observations
4. Place	the test tube in a beaker of ice water	to cool. Let it sit undisturbed	for 5 minutes.
5. Carefu	ully remove the test tube. If crystals h	nave formed repeat the heating	and cooling process.
	the solution is cold, carefully remove d your observations here.	it from the beaker and place in	the test tube rack. Add a small crystal.

7. Run hot water into the test tube to remove the crystals. Clean and dry the test tube. Put away all your equipment.

<u>An</u>	alysis/Conclusion:						
1.	In step # 3 you added a crystal to the warm solution. Did this crystal dissolve? Use this observation to decide if the warm solution was saturated, unsaturated or supersaturated? Explain your answer.						
2.	As the solution cooled, what do you think was happening to the solubility? Why?						
3.	In step #6 you added a crystal to the cool solution. What happened? Based on these observations, what type of solution was the cool solution? Explain your answer.						
4.	At what point in the procedure was the solution supersaturated?						
5.	What evidence do you have that the solution was supersaturated at the point you listed in #4?						
<u>Sa</u>	turation Practice:						
1.	What is one simple way to determine if a solution is saturated, unsaturated or supersaturated?						
2.	Describe <i>exactly</i> how you would know the difference between each of the types of solutions below.						
	Saturated						
	Unsaturated						
	Supersaturated						
3.	If the solubility of a particular solute is 10g/100g water at 20°C, which of the following solution concentrations would represent at supersaturated solution of that solute?						
	a. 10g/100g water at 25°C b. 10g/100g water at 15°C c. 9g/100g water at 20°C d. 11g/100g water at 20°C						
4.	An ionic compound has a solubility of 30g per 100 mL of water at room temperature. A solution containing 70g of the compound in 250 mL of water at the same temperature is:						
	e. Saturated g. Unsaturated						
5.	f. Supersaturated h. A suspension If a saturated solution of AgNO ₃ at 20°C contains 216 g of silver nitrate per 100.0 g of water, what mass of water could						
	contain 725 g of this solute at the same temperature.						
6.	Identify the following solutions as unsaturated, saturated, or supersaturated:						
	a. Rain clouds c. Vinegar (5% acetic acid)						
	b. Black coffee d. Kool-aid with sugar on the bottom						
7.	Give one example of a solution you encounter in your daily life: Is this solution unsaturated, saturated, or supersaturated?						