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Topic/Objective:	Name: Hannah Daley
Precipitation	Class/Period: AOSC200
	Date: 10/10/19

Essential Question:

How does solid an liquid precipitation form? What is needed for droplets to form? What type of precipitation will reach the surface?

Questions:	Notes:
A breif review	 The four main lifting mechanisms: Convection, Convergence, Frontal, Orographic/Mountain The Dry, Adiabatic Lapse rate: 10 degrees C/ kilometer of height The Saturated, Adiabatic Lapse rate: 6.5 degrees C/km The lapse rates are different because the saturated lapse rate accounts for the release of latent heat
Describe the characteristics of a roll cloud	 A temperature inversion above the cloud keeps the cloud from rising The air masses of different temperatures are meeting. Change of temperature causes warm, moist are to condense The warm air on one side rises The cold air on the other side sinks This makes a roll cloud I doubt Tim will ask about this, but he did talk a lot about it.
How does precipitation form?	 Step 1: Some sort of lifting mechanism is needed to get the warm, moist air at the surface to condense. The process of air being lifted is called an <u>updraft</u>. An updraft is required to form precipitation Step 2: vapor will <u>condense</u> into tiny water droplets Step 3: The continued <u>updraft</u> will cause this tiny droplets to collide into each other and grow. The process of this droplets colliding is called collision (kinda obvious there). The process of the droplets reforming as one larger droplet is called <u>coalescence.</u> Step 4: Once these droplets get big <u>gravity overtakes the downdraft</u> and the droplets fall through the cloud and potential all the way to the ground (it may evaporate before reaching the ground)
Temperature Profile in a cloud:	 This depends on where the cloud is and how thick it is General trend is that liquid droplets are at the bottom of the cloud and Ice and supercooled droplets are towards the top of the cloud This will matter more when we get to lightning in the future.
How does Ice precipitation form?	 This is very similar to the 4 steps above except instead of coalescence we call it <u>accretion</u> and instead of coalescence we say <u>aggregation</u> When there is ever a battle between ice and water droplets, the ice will win. This is because the intermolecular forces in a solid are harder to break than



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Summary

Students should know all of the underlined words and how they relate to clouds. Students should know the temperature profile needed to get snow, sleet, freezing rain, or rain.