Factors that make a Planet Habitable	Not Enough of the Factor	Just Right	Too Much of the Factor
Temperature Influences how quickly atoms & molecules move	Chemical Reactions necessary for life slow Freezes liquid water	-15C to 115C means that liquid water can exist in the right conditions	Too much heat and biological molecules will break apart Water Evaporates
Water Dissolves and transports chemicals within and to and from a cell	Chemicals a cell needs for energy and growth are not dissolved or transported to the cell	Cell processes can operate normally	Not usually a problem
Atmosphere Traps heat, shields the surface from harmful radiation, and provides chemicals needed for life	No insulating blanket and no protective shield	Keeps surface warm and protects it from radiation and medium sized meteorites	Causes a runaway greenhouse effect like we see on Venus
Energy Organisms use light or chemical energy to run their life processes	Too little sunlight or chemicals to provide cell energy, cells die	Cells can run chemical reactions necessary for life	Too much light could make a planet too hot or have too many harmful rays (UV)
Nutrients Used to build and maintain an organisms body.	No chemicals – no cellular processes	With a water cycle or volcanic activity, nutrients can be transported and replenished	Too much isn't a problem
Albedo Reflects a certain amount of starlight from a planet	The planet may absorb too much radiation and become too hot	The planet will balance its temperature to allow for liquid water	The planet will reflect too much radiation and become too cold
Protection Life needs protection from harmful solar radiation, as well as from orbit-crossing impactors	Radiation and impactors can reach the surface	The atmosphere or magnetic fields will protect from radiation and impactors	You can't have too much protection, unless it blocks energy from reaching the surface
Gravity Affects the physiology of living organisms, as well as the amount of atmosphere a planet has	The planet will have no atmosphere	The planet will have the perfect amount of atmosphere	Planets will hold on to too much atmosphere