



SCIENCE.EARTH.10C	<u>analyze how global surface ocean circulation is the result of wind, tides, the Coriolis effect, water density differences, and the shape of the ocean basins.</u>			
SCIENCE.EARTH.11	<u>Science concepts.</u> The student knows that <u>dynamic and complex interactions among Earth's systems produce</u> climate and <u>weather.</u> The student is expected to:	EARTH.15	<u>Fluid Earth.</u> The student knows that interactions among Earth's five subsystems influence climate and <u>resource availability, which affect Earth's habitability.</u> The student is expected to:	
SCIENCE.EARTH.11A	analyze <u>how energy transfer through Milankovitch cycles</u> , albedo, and differences in atmospheric and surface absorption <u>are mechanisms of climate;</u>	EARTH.14.A	analyze <u>the uneven distribution of solar energy on Earth's surface, including differences in atmospheric transparency, surface albedo, Earth's tilt, duration of insolation, and differences in atmospheric and surface absorption of energy;</u>	
SCIENCE.EARTH.11B	<u>describe how Earth's atmosphere is chemically and thermally stratified and how solar radiation interacts with the layers to cause the ozone layer, the jet stream, Hadley and Ferrel cells, and other atmospheric phenomena;</u>			
SCIENCE.EARTH.11C	<u>model</u> how <u>greenhouse gases</u> trap thermal energy <u>near</u> Earth's surface;	EARTH.14.B	<u>investigate</u> how <u>the atmosphere is heated from Earth's surface due to absorption of solar energy, which is rerradiated as thermal energy and trapped by selective absorbers;</u> and	
SCIENCE.EARTH.11D	<u>evaluate how the combination of multiple feedback loops alter global climate;</u>			
SCIENCE.EARTH.11E	investigate <u>and analyze</u> evidence <u>for climate changes over Earth's history using paleoclimate data, historical records, and measured greenhouse gas levels;</u>	EARTH.15.B	investigate evidence <u>such as ice cores, glacial striations, and fossils for climate variability and its use in developing computer models to explain present and predict future climates;</u>	
SCIENCE.EARTH.11F	explain how the transfer of thermal energy <u>among the hydrosphere, lithosphere, and atmosphere</u> influences <u>weather;</u> and	EARTH.14.C	explain how thermal energy transfer <u>between the ocean and atmosphere drives surface currents, includes El Niño currents, and evaporation that influence climate.</u>	
SCIENCE.EARTH.11G	describe how changing surfaceocean conditions, including El NiñorSouthern Oscillation, affect global weather and climate patterns.	EARTH.15.A	describe how changing surfaceocean conditions, including El NiñorSouthern Oscillation, affect global weather and climate patternshydrosphere,	
	<u>weather</u> and changing surfaceocean conditions, including El Niño			
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