







# OPERATION: Monster Storms

Researchers	Mission Overview	National Science Education Standards Alignment
 <p><b>Anthony Guillery</b> Airborne Science Manager, NASA/Goddard Space Flight Center/Wallops Flight Facility</p>	<p><b>Mission 1: Profiling the Suspects-Trouble Brewing in Earth's Atmosphere –</b> Students will gather critical weather intelligence for their community so they can anticipate the threat of a Monster Storm.</p>	<p><b>B.3.a</b> Energy is a property of many substances and is associated with heat, light, electricity, mechanical motion, sound, nuclei, and the nature of a chemical. <b>B.3.b</b> Heat moves in predictable ways, flowing from warmer objects to cooler ones, until both reach the same temperature. <b>D.1.h</b> The atmosphere is a mixture of nitrogen, oxygen, and trace gases that include water vapor <b>D.1.i</b> Clouds, formed by the condensation of water vapor, affect weather and climate.</p>
 <p><b>Robbie Hood</b> Atmospheric Scientist, NASA/Goddard Space Flight Center/Wallops Flight Facility</p>	<p><b>Mission 2: The Plot Condenses-Air and Water –</b> Students will pursue energy through the intricate pathways of the water cycle as it fuels Monster Storms.</p>	<p><b>B.3.a</b> See above <b>D.1.f</b> Water, which covers the majority of the Earth's surface, circulates through the crust, oceans, and atmosphere in what is known as the water cycle. <b>D.1.h</b> See above <b>D.1.i</b> See above</p>
 <p><b>Tim Samaras</b> Senior Engineer, Applied Research Associates NGS Emerging Explorer</p>	<p><b>Mission 3: The Chase-On the Run in Tornado Alley –</b> Students will learn how to alert their community to the threat of thunderstorms and tornadoes by tracking elusive clues in the atmosphere.</p>	<p><b>B.3.a</b> See above <b>D.1.i</b> See above <b>D.1.j</b> Global patterns of atmospheric movement influence local weather <b>F.3.a</b> Internal and external processes of the Earth system cause natural hazards, events that change or destroy human and wildlife habitats, damage property, and harm or kill humans. <b>F.3.b</b> Human activities also can induce hazards through resource acquisition, urban growth, land-use decisions, and waste disposal.</p>
 <p><b>Jason Dunion</b> Research Meteorologist, Univ. of Miami; NOAA/AOML Hurricane Research Division</p>	<p><b>Mission 4: The Hunt-Flying into the Eye –</b> Students will predict hurricanes by exposing the mysteries of their formation, intensity, track and decay.</p>	<p><b>D.1.i</b> See above <b>E.2.e</b> Technological designs have constraints. <b>F.3.a</b> See above <b>F.3.b</b> See above</p>
 <p><b>Shirley Murillo</b> Research Meteorologist, NOAA/AOML Hurricane Research Division Specialist NOAA</p>	<p><b>Mission 5: The Recovery-Living with Monster Storms –</b> Students will protect and minimize the loss of life and vital assets before, during and after a storm.</p>	<p><b>E.2.d</b> Perfectly designed solutions do not exist. All technological solutions have tradeoffs, such as safety, cost, efficiency, and appearance. <b>E.2.e</b> See above <b>F.3.a</b> See above <b>F.3.b</b> See above</p>