

5th Grade QUESTs

Guam Solution-based STEM Design Challenges

Design Challenge, Anchor Question	NGSS Performance Expectation	Description
<p>QUEST: Forecast and Prepare for Extreme Weather on Guam How can we forecast weather patterns that are changing as the climate changes, and how can we help people prepare for extreme weather events?</p>	<p>5-ESS2-1. Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.</p> <p>NGSS 5-ESS2-1 page</p> <p>DCI: ESS2.A: Earth Materials and Systems Earth's major systems are the geosphere (solid and molten rock, soil, and sediments), the hydrosphere (water and ice), the atmosphere (air), and the biosphere (living things, including humans). These systems interact in multiple ways to affect Earth's surface materials and processes. The ocean supports a variety of ecosystems and organisms, shapes landforms, and influences climate. Winds and clouds in the atmosphere interact with the landforms to determine patterns of weather. (5-ESS2-1)</p>	<p>Guam is experiencing more extreme weather conditions because of changing climate. Residents and tourists need to know what to do to be safe in these situations. Different weather instruments are needed to gather the data that are used to create weather and climate models.</p> <p>*Build multiple weather instruments and collect data for a week and compare your results to those provided on Guam weather service sites. Once you have an understanding of the different kinds of data, create a model that illustrates severe weather events that result from weather and climate change, and share this information in a Weather Alert Day report that informs the community about how to respond in an extreme weather condition.</p>
<p>QUEST design challenge description is in the 5th grade folder.</p>		

Resources for more Guam-STEM design challenge ideas you could try on your own

Design Challenge	NGSS Performance Expectation*	Lesson Resources
<p>Build and use a telescope to study the night sky objects that are used to navigate ocean travel.</p>	<p>Supporting standards in FOSS Earth and Sky's astronomy unit</p> <p>NGSS 5-ESS1-1 page</p>	<p>Design:</p> <ul style="list-style-type: none"> ● Build a telescope http://www.optics4kids.org/home/content/classroom-activities/medium/make-a-telescope/ ● Make a telescope (National Geographic) https://kids.nationalgeographic.com/nature/article/make-a-telescope <p>Videos:</p>

Design Challenge	NGSS Performance Expectation*	Lesson Resources
		<ul style="list-style-type: none"> ● How to make a small easy telescope https://www.youtube.com/watch?v=mslAdyljrwl ● How to make... https://www.youtube.com/watch?v=-CUu13-a18A ● Telescope making model for school https://www.youtube.com/watch?v=jcs1ClroaNl