

Kindergarten QUESTs

Guam Solution-based STEM Design Challenges

Design Challenge, Anchor Question	NGSS Performance Expectation	Description
<p>QUEST: Use different sails to catch the wind How can you design sails for sailboats and windsurfing boards that cause them to sail better on windy days?</p>	<p>K-PS2-2. Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.* NGSS K-PS2-2 page</p>	<p>Water activities that use sails to move across the water are common on Guam. When you go to the beach, you might see traditional and competitive proas, large and small sailboats, and windsurfers on their boards. *Design the sail for a boat or board that causes it to sail faster and farther on a windy day. The sails can be different sizes, shapes, and direction to the wind.</p>
<p>QUEST design challenge description is in the Kindergarten folder.</p>		

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

Design Challenge	NGSS Performance Expectation*	Lesson Resources
<p>Design and build container pots or other useful products from recycled or discarded materials. If a container pot, plant seeds to take home.</p>	<p>K-ESS3-3. Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.* NGSS K-ESS3-3 page</p>	<ul style="list-style-type: none"> ● Video ideas: 9 Ways to Upcycle: https://goo.gl/3anERN ● Video ideas: Planting seeds collected from fruits we eat. www.facebook.com/watch/?v=2204963259558767 ● Picture book about edible parts of different plants. (Video reading) www.youtube.com/watch?v=zljh4hYkhrl ● Origami newspaper seed pots: www.forgreenies.com/origami-newspaper-seed-ling-pots ● Rolled newspaper seed pots. http://wonderfuldiy.com/how-to-make-newspaper-pots-for-seed-starting/
<p>Build a [structure / fort] for the playground that will reduce the warming effect of sunlight on an area.</p>	<p>K-PS3-2. Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.* NGSS K-PS3-2 page</p>	<ul style="list-style-type: none"> ● Create shade to protect from the sun https://www.sciencebuddies.org/teacher-resources/lesson-plans/create-shade ● Video instructions Design a shade structure (Chemical Society) https://www.youtube.com/watch?v=dfSLlI8Eu0

Design Challenge	NGSS Performance Expectation*	Lesson Resources
<p>Design a weather forecast by determining the questions that need to be answered with severe weather.</p>	<p>K-ESS3-2. Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.*</p> <p>NGSS K-ESS3-2 page</p>	<ul style="list-style-type: none"> ● Video: Rain Observation by Sid the Science Kid https://www.youtube.com/watch?v=axisPgapY330 ● Printable weather charts for kindergarteners. https://www.printablee.com/post_printable-weather-chart-for-kindergarten_88974/ ● Weather chart cards http://www.abcteach.com/documents/chart-cards-weather-12381 ● Weather and Climate, Pt 1(NGSS) http://ngss-k-5-ausd.weebly.com/kweather-and-climate-part-1.html ● Kindergarten Weather Activities: http://www.ehow.com/info_7817511_kindergarten-weather-lesson-plan-activities.html ● Tornado in a Bottle Experiment: http://www.sciencekids.co.nz/experiments/makeatornado.html