

NHU/NASA Summer Institute

Lesson Plan

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Lesson Plan Title	Mini Wind Mill: Wind Measurer
Grade Level	First
Concept/Topic to Teach	Science—Weather and the Compass Rose
Content Standards	3a—Earth Sciences—Weather can be observed, measured, and described. Students know how to use simple tools to measure weather conditions and record changes from day to day and across the seasons.
General Goals	I want the students to get a concept of weather, seasonal wind pattern, and wind speed through this self weather measuring tool.
Specific Objectives	Students will understand wind patterns and be able to observe and analyze the weather.
Required Materials	Plastic cups, matching cup lids, straws, 4x4 paper sheets, brads, tape
Anticipatory Set	I plan to get the students to design the paper wheel and then have them follow the steps to make the mini wind mill wind measurer.
Step-by-Step Procedures	First, design the 4x4 paper for the paper wheel. Second, fasten the paper wheel to the straw with a brad. Third, put the straw in the cup and tape the straw to the cup lid. Fifth, mark the bottom of the plastic cup with the four directions or

	<p>eight depending on how advanced and challenged these students are. Sixth, fill the cup with water for security. Seventh, time to take the device for an experiment.</p> <p>General Steps: Plastic cup with lid that has an opening for a straw. The straw will be pinned to a paper wheel at the top. At the bottom of the straw, a compass rose is attached it.</p>
Plan for Guided Practice	Take the device out for a practice and keep a log for the first trial.
Plan for Independent Practice	<p>Students may make one with the family and have it as a family project to measure the wind direction for next weather report. Students may also read more about wind through these web sites.</p> <p>http://observe.arc.nasa.gov/nasa/aero/tunnel/tunnel_nasa.html http://winds.jpl.nasa.gov/images/Anim/nscatdata-pac1mov.cfm http://winds.jpl.nasa.gov/publications/adeos_launch.cfm http://winds.jpl.nasa.gov/aboutScat/winds.cfm http://winds.jpl.nasa.gov/publications/guam_typhoon.cfm</p>
Assessment (based on objectives)	Ask students how to measure wind and what to measure it with for prior knowledge. Later on, have students demonstrate the self device for how it functions and what does it do.
Adaptations (ELL students or special populations)	ELL students may work with a partner for the log. Since building the device is mostly hands-on, it should be an interesting to work with.
Extensions (for gifted students)	The gifted children may extend the goals of this project to a higher level with wind speed such cycles of the paper wheel per minute and they can also observe the effect of heat.