

P R O J E C T O V E R V I E W

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Name of Project:	Forecasting the Future	Duration:	15-30 hrs
Subject/Course:	Earth Science	Teacher(s): Beth Kroiz and Alexis Sampson	Grade Level: 8th
Other Subject Areas to Be Included, if any:	ELA - Writing		

Project Idea Summary of the issue, challenge, investigation, scenario, or problem:	Weather patterns in the Tillamook coastal region vary vastly between geographic locations. One side of town could be completely sunny while the other side is pouring rain. This is believed to be linked with land formations. Students examine factors (e.g. temperature, relative humidity, air pressure and altitude) that influence the weather by monitoring a classroom weather station and launching a weather balloon. They examine the weather data transmitted as the balloon increases in altitude in three different locations, and then graph the data and look for relationships between the factors.
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Driving Question	How can we better understand and predict the weather?
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CCSS to be taught and assessed:	Science: 8.2E.3 Explain the causes of patterns of atmospheric and oceanic movement and the effects on weather and climate, 8.2P.2 Explain how energy is transferred, transformed, and conserved, Math: 8.SP Statistics & Probability -- Investigate patterns of association in bivariate data, Scientific Inquiry and Math Practice
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Additional Standards to be taught and assessed:	
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21st Century Competencies to be taught and assessed:	Collaboration		Creativity & Innovation	
	Communication (Oral Presentation)		Other:	
	Critical Thinking			

Major Products & Performances	Group:	Collect weather data from station, Launch balloon and collect data, create graphs by hand and in Excel & Keynote (iPad), create posters of data & conclusions	<input type="checkbox"/> Presentation Audience	
			<input checked="" type="checkbox"/>	Class
				School
				Community
	Individual:	Select two variables to study a relationship, create graphs of data by hand and in Keynote (iPad), and write a scientific report (question, procedure, results, conclusion)		Experts
			Web	

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Entry Event to launch inquiry and engage students:	Students read an article about being a meteorologist and watched a video of a weather forecast. Students then explore and evaluate current methods of collecting data used to predict weather patterns.				
Assessments	Formative Assessments (During Project)	Quizzes/Tests		Practice Presentations	
		Journal/Learning Log	X	Notes	X
		Preliminary Plans/Outlines/Prototypes	X	Checklists	X
		Rough Drafts	X	Concept Maps	
		Online Tests/Exams		Other:	
	Summative Assessments (End of Project)	Written Product(s), with rubric: _____	X	Other Product(s) or Performance(s), with rubric: _____	
		Oral Presentation, with rubric		Peer Evaluation	X
		Multiple Choice/Short Answer Test	X	Self-Evaluation	
		Essay Test		Other:	
	Resources Needed	On-site people, facilities:	Natural Resources Coordinator, Near Space Corporation, and Parent Volunteer & ½ Day Classified Sub (for bus supervision)		
Equipment:		Weather balloon, Sonde (data recorder), 2 winch systems (1 student-designed), GPS units, compasses, inclinometers, iPads, and computers with Excel			
Materials:		String, maps, clip-boards, field trip booklets for recording data, pens, markers, posterboard, and rubrics for grading posters			
Community resources:		Near Space Corporation and parent volunteer			
Reflection Methods	(Individual, Group, and/or Whole Class)	Journal/Learning Log	X	Focus Group	
		Whole-Class Discussion	X	Fishbowl Discussion	

		Survey		Other: Post-it note feedback posters	
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