ODU BLAST workshop sessions mapped to virginia department of education standards
Environmental literacy – sustainability by earth science, biology, physics, math, algebra i, family (community*) life education, (task team education **): high school (9-12)

Environmental Literacy – Sustainability Standard								
Standards		**Special Evening Events**			**Concurrent Workshop Sessions**			
		Our Living Climate: Earth Science; Biology; Physics; Life Education	*Rockets to the Rescue: Family/ (Community) Life*	*Elizabeth River Learning Barge: Biology*	*Our Home Planet: Physics*	*Water Water Everywhere: Engineering*	*Changing Oceans: Oceanography*	*Satellites, Laser, and Drones: Remote Sensing*
Earth Science	E.S. 6: Students will investigate and understand difference between renewable and nonrenewable resources. Key Concepts:	X						
	• Fossil fuels, minerals, rocks, water, and vegetation	X						
	• Advantages and disadvantages of various sources							
	• Resources found in Virginia							
	• Environmental costs and benefits							
	E.S. 8: Students will investigate and understand how freshwater resources are influences by geological processes and the activities of humans. Key Concepts:	X		X	X	X		X
	• Dependence on freshwater resources and the effects of human usage on water quality	X		X		X		
	• Identification of the major watershed systems in Virginia, including the Chesapeake Bay and its tributaries			X				X

*Denotes liberty taken with Family Life Education Standard – included consideration of Community Life Education

**Task-Team Education is not a Virginia Department of Education Standard but was an area covered in ODU BLAST Special Evening Event: Rockets to the Rescue

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Earth Science	E.S. 10: Students will investigate and understand the oceans are complex, interactive, physical, chemical, and biological systems and are subject to long- and short-term variations. Key Concepts:	X	X	X	X	X	X	X
	• Importance of environmental and geological implications	X						X
	• Systems interactions						X	
	• Economic and public policy issues concerning the oceans and the coastal zone including the Chesapeake Bay		X	X		X		X
	E.S. 11: Students will investigate and understand the origin and evolution of the atmosphere and the interrelationships of geologic processes, biologic processes, and human activities on its composition and dynamics. Key Concepts:	X				X	X	X
	• Potential changes to the atmosphere and climate due to human, biologic, and geologic activity	X				X	X	X

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Biology	BIO.8: Students will investigate and understand dynamic equilibria within populations, communities, and ecosystems. Key Concepts:	X			X	X	X	X
	• Effects of natural events and human activities on ecosystems	X			X	X	X	
Physics	PH.4: Students will investigate and understand how applications of physics affect the world Key Concepts:	X	X		X		X	X
	• Examples from the real world	X			X		X	X
	• Exploration on the roles and contributions of science and technology	X	X		X			X
	PH.7: Students will investigate and understand that energy can be transferred and transformed to provide usable work. Key Concepts:	X			X		X	X
	• Transfer and storage of energy among systems including mechanical, thermal, gravitational, electromagnetic, chemical, and nuclear systems	X			X		X	X

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Math	MA 8.1: Students will make connections between any two representations (tables, graphs, words, and rules) of a given relationship. Key Concepts/Knowledge: Student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations				X	X	X	
	• Graph in a coordinate plane ordered pairs that represent a relation				X			
	• Describe represent relations and functions, using tables, graphs, words, and rules. Given one representation, student will be able to represent the relation in another form				X	X	X	
Algebra I	ALG.11: Students will collect and analyze data, determine the equation of the curve or best fit in order to make predictions, and solve real-world problems, using mathematical models. Mathematical models will include linear and quadratic functions. Key Concepts /Knowledge: Student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations		X		X		X	

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Algebra I	• Write an equation for a curve or best fit, given a set of no more than twenty data points in a table, graph, or real-world situation				X		X	
	• Make predictions about unknown outcomes, using the equation of the curve or best fit		X		X		X	
	• Design experiments and collect data to address specific, real-world questions							
	• Evaluate the reasonableness of a mathematical model of a real-world situation							
Family (Community) Life Education (Team Building)	Students develop values, attitudes and abilities to understand benefits, challenges, and responsibilities of community relationships. Key Concepts/Knowledge:		X					X
	• FLE 8.1: Students increase his or her self-understanding and self-acceptance (and acceptance of others) now and in the future.		X					

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Family (Community) Life Education	• FLE 8.4: Being aware of stages of mental and emotional development with the goal of increasing self-understanding and self-acceptance (and understanding and acceptance of others) now and in the future.		X					
	• FLE 9.4: Students practice methods of gathering information and applying the decision-making process. Emphasis is placed on the need for personal values, knowledge, positive mental health practices, and reason as basis for decision-making.		X					X
	• FLE 9.13: Students identify forms of discrimination and the consequences of discrimination on individual and community. Discussion focuses on the value and importance of differences among individuals.		X					

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Family (Community) Life Education	• FLE 9.14: Students formulate educational and career objectives. Students complete activities that enable them to gain insight into the variety of personal and career options available to males and females.	X	X	X	X	X	X	X
Task-Team Education	Students will enhance social relations and define roles within teams to accomplish collaborative tasks. Key Concepts/Abilities:		X		X	X	X	X
	• Agree on tasks		X		X	X	X	X
	• Define common goals		X		X	X		X
	• Reduce ambiguity by identifying roles		X		X	X	X	X
	• Build effective relationships		X		X	X	X	X
	• Negotiate conflicts and differences of opinions		X		X	X		X
	• Define criteria for solution		X		X	X		X
	• Generate multiple solutions		X		X	X		X
	• Test solutions		X		X	X	X	X
	• Identify best solution		X		X	X		X