

2700-0150

**Appendix 4: Item-by-Item Justification of Youth Baseline
Survey Items**

Question	Research Question	Source	Answer Options	Scale	Purpose of Item	Justification Notes
Your first name and last name	N/A	SoI student survey 2011	First name, Last name	N/A	A	Information is used to confirm match in dataset
What is your birthday?	N/A	SoI student survey 2011	Month Day Year	N/A	A	Information is used to generate a unique identifier in dataset for matching purposes
What grade level will you enter in fall 2013? Please check one only.	4	SoI student survey 2011	4th 5th 6th 7th 8th 9th Other	N/A	A,D	Information is used to confirm match in dataset, to establish youth eligibility for sample and provide capability to disaggregate findings by grade level and to remove students outside of the grade range from the sample
As things stand now, how far in school do you think you will get?	4	Adapted from HSLs of 2009, Baseline Parent Survey	Less than high school Earn a high school diploma or GED Complete an Associate’s degree Complete a Bachelor’s degree Complete a Master’s degree Complete a Ph.D., M.D., law degree, or other high level professional degree I don’t know	N/A	D, C	This data element identifies the youth's educational expectations, which may serve as a correlate to student interest in academically focused activities
Why did you sign up for Summer of Innovation? Check all that apply.	4	Adapted from the AWE Middle School Students Pre-Activity Survey	To have fun To learn more about NASA and space To have something to do To learn more about different majors in college (e.g., engineering, science) To learn more about science To learn about what scientists and engineers do To make my parents/guardians happy To meet others with interests similar to mine To help me to do well in school None of these	N/A	D	This question is intended to identify youth's motivation for SoI enrollment.
Have you ever been in	4	Adapted from 4-H Science	Yes; No;	N/A	C	Whether a youth has previously participated in an SoI camp will

another Summer of Innovation camp?		Youth Survey (2012)	I don't know			serve as a control variable.
What science class did you take last year?	9	Adapted from HSLs of 2009, Student Baseline Survey; science class titles drawn from CCSSO, State Indicators of Science and Mathematics Education 2007, Table 1.6 (http://program.s.ccsso.org/content/pdfs/SM%2007%20report%20part%201.pdf)	Science or General Science Life Science Earth Science Physical Science, Integrated or Coordinated Science Other science course I don't know	N/A	C	This question is one of two questions intended to identify student interest in past science class at school. Class subject is identified in order to control for this variable in the analysis of change in student interest.
How much do you agree or disagree with the following statements about your 2012-13 science class?	9	Adapted from HSLs of 2009, Student Baseline Survey	I enjoyed this class very much I thought this class was a waste of my time I thought this class was boring	Never Rarely Sometimes Often	D	This question is intended to identify student engagement in past science class at school, which is a dependent variable for this study.
Since the beginning of the last school year (2012-2013), which of the following	9	Adapted from HSLs of 2009, Student Baseline Survey	Science club Science competition Science camp Science study groups or a program where you were tutored in science None of these	N/A	D	This question is intended to identify student engagement in extracurricular science activities, which is a dependent variable for this study.

activities have you participated in?						
Since the beginning of the last school year (2012-2013), how often have you done the following science activities?	9	Adapted from HSLs of 2009, Student Baseline Survey; Last two answer options from the Noyce Enthusiasm for Science scale and the AWE Rating Scale for Sense of Community (2009)	Read science books and magazines Access web sites for computer technology information Visit a science museum, planetarium, or environmental center Play games or use kits or materials to do experiments or build things at home Watch programs on TV about nature and discoveries	Never Rarely Sometimes Often		This question is intended to identify student engagement in outside of school time science activities, which is a dependent variable for this study.
Please indicate the extent to which you agree or disagree with each of the following statements. Select one in each row.	9	Noyce Enthusiasm for Science scale/Common Instrument	Science is something I get excited about	Strongly Disagree Disagree Agree Strongly Agree	D	This question is part of a validated scale intended to ascertain student enthusiasm/interest in science, which is a dependent variable for this study.
		Noyce Enthusiasm for Science scale/Common Instrument	I like to take things apart to learn more about them			
		Noyce Enthusiasm for Science scale/Common Instrument	I like to participate in science projects			
		Noyce Enthusiasm for Science scale/Common Instrument	I'd like to get a science kit as a gift (for example, a microscope, magnifying glass, a robot, etc.)			
		Noyce	I like to see how things are made (for			

		Enthusiasm for Science scale/Common Instrument	example, ice-cream, a TV, an iPhone, energy, etc)			
		Noyce Enthusiasm for Science scale/Common Instrument	I like to watch programs on TV about nature and discoveries			
		Noyce Enthusiasm for Science scale/Common Instrument	I am curious to learn more about science, computers or technology			
Please indicate the extent to which you agree or disagree with each of the following statements. Select one in each row.	9	Noyce Enthusiasm for Science scale/Common Instrument	I like to work on science activities	Strongly Disagree Disagree Agree Strongly Agree	D	This question is part of a validated scale intended to ascertain student enthusiasm/interest in science, which is a dependent variable for this study.
		Noyce Enthusiasm for Science scale/Common Instrument	If I have kids when I grow up, I will take them to a science museum			
		Noyce Enthusiasm for Science scale/Common Instrument	I would like to have a science or computer job in the future.			
		Noyce Enthusiasm for Science scale/Common Instrument	I want to understand science (for example, to know how computers work, how rain forms, or how airplanes fly)			
		Noyce Enthusiasm for Science scale/Common Instrument	I enjoy visiting science museums or zoos			
		Noyce	I get excited about learning about new			

		Enthusiasm for Science scale/Common Instrument	discoveries or inventions			
		Noyce Enthusiasm for Science scale/Common Instrument	I like reading science magazines			
		Noyce Enthusiasm for Science scale/Common Instrument	I pay attention when people talk about recycling to protect our environment			
		Noyce Enthusiasm for Science scale/Common Instrument	I am curious to learn more about cars that run on electricity			
		Noyce Enthusiasm for Science scale/Common Instrument	I get excited to find out that I will be doing a science activity			
		Noyce Enthusiasm for Science scale/Common Instrument	I enjoy reading science fiction books			
		Noyce Enthusiasm for Science scale/Common Instrument	I like learning about science on the internet			
		Noyce Enthusiasm for Science scale/Common Instrument	I like online games or computer programs that teach me about science			
		Noyce	Science is boring			

		Enthusiasm for Science scale/Common Instrument				
		Noyce Enthusiasm for Science scale/Common Instrument	I do science-related activities that are not for schoolwork.			
		Noyce Enthusiasm for Science scale/Common Instrument	I like science			
		Noyce Enthusiasm for Science scale/Common Instrument	Science is one of my favorite subjects			
		Noyce Enthusiasm for Science scale/Common Instrument	I take science only because I have to			
		Noyce Enthusiasm for Science scale/Common Instrument	I take science only because it will help me in the future			
		Noyce Enthusiasm for Science scale/Common Instrument	Before joining this program, I was interested in science and science-related things			
		Noyce Enthusiasm for Science scale/Common Instrument	Before joining this program, I participated in science activities outside of school			
		Adapted from	I like to design a solution to a problem			These questions are intended to

		the AWE Middle School Students Pre-Activity Survey				ascertain student enthusiasm/interest in engineering, which is a dependent variable for this study.
		Adapted from the AWE Middle School Students Pre-Activity Survey	I like to be part of a team that designs and builds a hands-on project			
		Adapted from the AWE Middle School Students Pre-Activity Survey	I'm curious to learn how to program a computer game			
		Adapted from the AWE Middle School Students Pre-Activity Survey	I like to design and build something mechanical that works			

¹Research Questions Answered by Parent Survey

- 4: What are the characteristics of SoI camps and their participants?
- 9: How does the SoI experience affect youth engagement with STEM?

²Purpose of Item

- A: indicates that the variable from this item will be used for administrative purposes (e.g., documentation of consent or non-consent, longitudinal tracking, pre and post survey data linking)
- D: indicates that the variable from this item will be used in descriptive analysis
- C: indicates that the variable from this item will be used as a control variable