

Appendix F. Map of Research Questions to Data Sources

Map of Research Questions to Data Sources

Research Question	Teacher survey	Teacher log	Student survey	Student focus group	Program data
Participants					
What are the characteristics of schools, teachers, and students that participate?	Background Section		4-5		NES teacher and school participation data
Implementation					
What does NASA provide as part of NES?					NES staff interviews
What components of NES do teachers access and use?	Post-Survey 6,9	1-4,10, 12, Parts A-D		1	Orientation dates
How is NES being implemented in schools and classrooms?		A1, B1, D2-4, Parts E-G		1, 3	
How are teachers supporting their use of NES		10-11, Parts C-D			
What are barriers to implementation?	1-2,4				
What are reasons for partial participation?					
What are user's impressions of materials?	10,11	A2, A5, A6, A8, B2, B4, B6, B8, C2, C3		5	
What best practices do teachers use in the areas of curriculum integration, student engagement, technology use, community outreach and family involvement?		A4, A6-A8, B5-B8, Parts E-G			
Are NES teachers collaborating with one another?		11, Part D,			
Teacher outcomes					
What are teachers' comfort and confidence with NES products?	1-5	A5,B4			
Does teachers' comfort with STEM topics change with participation in NES?	1				
Student outcomes					
What are the levels of student engagement in NES and STEM activities?		A6, B6		2-3, 9-10	
Do students associate perceived changes with NES activities?				1,6-11	
Is there a change in student attitudes towards STEM before and after the implementation of NES?			1-2	6-7,9-10	
Is there a change in student interest in other NASA activities?			4 (3 on survey for 4-5 graders)	11	
Is there a change in student interest in NASA-related STEM careers?			3 (not present for 4-5 graders)	8	