

## **Appendix B. Instruments – Student Focus Group Guide**

## NASA Explorer Schools Student Focus Group Guide

### Facilitator Script:

Hello! Thanks so much for coming! My name is [Name], and this is my colleague [colleague name]. We work for Abt Associates, a research company located in Cambridge, MA. NASA has hired our company to evaluate the NASA Explorer Schools (NES) program and learn about what teachers and students are getting out of the materials and activities. More specifically, we wanted to talk to you to get your opinions about how your teacher uses the NASA Explorer Schools materials and whether or not you are enjoying them here at (school name).

To make sure everyone is familiar with the terms we will be using, when we talk about STEM, we mean science, technology, engineering, and mathematics materials or classes.

Before we begin, I'd like to go over some of the ground rules. First, it's very important to let everyone voice their opinions if they wish. This is a space where it's okay to disagree, and in fact, it is important for us at Abt to understand the whole range of opinions about the NASA Explorer Schools program. Everybody should feel free to speak up, even if you disagree with someone else's idea. Second, it is also important that what gets said in this room stays in this room. Your nametags are so that we can have a smoother conversation, but we will keep your comments confidential and will not use your names in any reports. We have these rules so that we can have an open and honest conversation about your experiences at school and so that staff at NASA can better understand what might be working well and what might need improvement in the NASA Explorer School materials and activities at (school name).

Our conversation will last somewhere between half an hour and an hour, but if at any time you want or need to leave, please feel free to do so. If any part of the conversation makes you uncomfortable, we would very much appreciate you letting us know. You can do so either by telling me or [colleague name] after the session ends, or by contacting one of the people listed at the bottom of the consent form.

*Before we start our discussion, does anyone have any questions? If no one objects, we will be taping our conversation, only for the purposes of backing up our own notes later. Is that alright with everyone?*

Okay, let's begin.

*Let's begin by going around the room and introducing ourselves. You may know each other, but you're all new to us and we're new to you. Just tell us your name, your homeroom teacher, and your favorite class at school.*

*Fantastic, it's great to meet all of you.*

*Let me tell you a little bit about how this is going to work. We're going to ask you some questions about the NES materials you use in your classes. Each time we ask a question, we'll give all of you a chance to first think quietly to yourselves, and then to discuss your ideas with the person sitting beside you (to your left) before we ask you to contribute your thoughts to the entire group.*

Any questions?

**Experience with NES**

Before we begin I need to ask a question of the whole group:

1. Are you aware that your teacher has been using NASA education materials/activities in your classroom?
  - Let's look at some of the materials to see if you remember them. [Show color copies of NES materials used in the classroom.]
  - Did your teacher tell you these were NASA materials?
  - Did your teacher use any other NASA materials/activities that we haven't gone over?
- Has your teacher talked about the NASA Explorer Schools program? Did you know that the NASA activities and materials we have been talking about are from the NASA Explorer Schools program?

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2. Which of the NASA materials/activities we just reviewed did you **most** enjoy and why?
3. Which of the NASA materials/activities did you **least** enjoy and why?
4. Did you find the NASA materials challenging or easy?
  - What specifically was challenging and why?
  - What specifically was easy and why?
5. If you were to recommend a change in the NASA activities, what would it be?

**Increased positive attitudes about STEM**

6. In general, did participation in NASA activities change the way you think about science, technology, engineering, or mathematics (STEM)?
  - a. If so, how?
  - b. What may have impacted your thinking?

**Improved self-efficacy for STEM learning and activities**

7. Has participating in the NASA activities affected your confidence to learn or understand similar subjects (i.e., STEM content)
  - a. If so, how?
  - b. What may have impacted your confidence?

***Increased interest in NASA STEM careers***

8. As part of the NASA activities, did your class talk about careers in STEM (e.g., becoming a scientist or even working at NASA some day)?
9. Do you think you might be interested in a future job in STEM as a result of your experience with NASA materials? Why or why not?

***Increased interest in STEM educational opportunities***

10. Did participating in NASA activities motivate or prepare you for other STEM classes or activities at school?
  - a. Would you be more or less likely to take additional STEM classes if they were available to you?
  - b. If yes, why do you think you may be more interested in other STEM activities?

***Increased engagement in STEM activities***

10. How has participating in NASA activities affected your interest in other STEM activities (e.g., extra curricular activities such as clubs)?
  - a. If more interested, why do you think you may be more interested?
11. Are you now more or less likely to become involved in other STEM activities?
  - b. Why and what kind of activities?

***Increased access to and participation in NASA activities***

12. Now that you've had experience with some of the NASA materials available to students, do you think you would be interested in other NASA activities?
  - Have you checked out the NASA website?
  - Have you seen other NASA opportunities that look interesting to you? If yes, what are they?
  - If so, please provide some examples of NASA activities that might be interesting to you.