Appendix 4: Crosswalk of Student Survey Items

Revised: June 8, 2011

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| **Crosswalk of Student Survey Items to Research Questions, Uses in Analysis, and Source of Item** |  |  |   |  |
| **Survey Item** | **Research Question1** | **Purpose of Item2** | **Source of Item3** | **Grade level version of survey4** |
|
| **Respondent Background** |
| First and last name |  | A | A | B |
| Birthday |  | A | A | B |
| Today's date |  | A | A | B |
| Grade level in fall 2011 | RQ1 | A, C, D | A | B |
| Name of school in fall 2011 |   | A | A | B |
| **Attitude and Interest Toward Science** |
| Attitude toward science scale5 |  |   |   |   |
|  | *Science is boring* | RQ2 | O | B | B |
|  | *I enjoy my science class* | RQ2 | O | B | B |
|  | *I like science a lot* | RQ2 | O | B | B |
|  | *I think scientists are cool people* | RQ2 | O | B | B |
|  | *Everyone should learn about science* | RQ2 | O | B | B |
|  | *I have good feelings about science* | RQ2 | O | B | B |
|  | *I would enjoy being a scientist* | RQ2 | O | B | B |
| Career interest in science scale6 |  |   |   |   |
|  | *When I leave school, I would like to work with people who make discoveries in science* | RQ2 | O | C | M |
|  | *I do not want a job in a science laboratory after I leave school* | RQ2 | O | C | M |
|  | *Working in a science laboratory would be an interesting way to earn a living* | RQ2 | O | C | M |
|  | *I would like to teach science when I leave school* | RQ2 | O | C | M |
|  | *I would like to be a science teacher when I grow up* | RQ2 | O | C | E |
|  | *A job as a scientist would be interesting* | RQ2 | O | C | M |
|  | *I do not want to be a scientist when I leave school* | RQ2 | O | C | M |
|  | *I do not want to be a scientist when I grow up* | RQ2 | O | C | E |
|  | *A career in science would dull and boring* | RQ2 | O | C | M |
|  | *A job as a scientist would be boring* | RQ2 | O | C | M |
|  | *I do not want to become a scientist because it needs too much education* | RQ2 | O | C | M |
|  | *I would like to be a scientist when I leave school* | RQ2 | O | C | M |
|  | *I would like to be a scientist when I grow up* | RQ2 | O | C | E |
| Leisure interest in science scale7 |  |   |   |   |
|  | *I would like to belong to a science club* | RQ2 | O | C | B |
|  | *I get bored watching science programs on TV at home* | RQ2 | O | C | B |
|  | *I would like to be given a science book or a piece of scientific equipment as a present* | RQ2 | O | C | B |
|  | *I do not like reading books about science during my free time* | RQ2 | O | C | B |
|  | *I would like to do science experiments at home* | RQ2 | O | C | B |
|  | *I would enjoy having a job related to science during my summer vacation* | RQ2 | O | C | B |
|  | *I do not like looking at websites about science* | RQ2 | O | C | B |
|  | *I would enjoy visiting a science museum on the weekend* | RQ2 | O | C | B |
|  | *Talking to friends about science after school would be boring* | RQ2 | O | C | B |
|  | *Watching movies about science would be boring*  | RQ2 | O | C | B |
| Interest in NASA related activities  |  |   |   |   |
|  | *Doing additional hands-on science activities in my classroom* | RQ2 | O | A | B |
|  | *Having a college internship in science* | RQ2 | O | A | M |
|  | *Talking with a scientist or engineer* | RQ2 | O | A | B |
|  | *Participating in a rocket or space shuttle launch event* | RQ2 | O | A | B |
|  | *Participating in a live video downlink event from the International Space Station or Space Shuttle* | RQ2 | O | A | B |
|  | *Visiting a science museum, science center, or planetarium* | RQ2 | O | A | B |
|  | *Participating in a science competition* | RQ2 | O | A | B |
|  | *Attending a science career fair* | RQ2 | O | A | M |
|   | *Attending an after-school science club or activity* | RQ2 | O | A | B |
| **Interest Toward non-Science Careers** |
|  | *I would like to be a police officer when I grow up* | RQ2 | C | A | B |
|  | *I would like to be a lawyer when I grow up* | RQ2 | C | A | B |
|  | *I would enjoy being a business person* | RQ2 | C | A | B |
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| **1Research Questions Answered by Student Survey** |
|  | RQ1: Who participates in SoI? |  |
|  | RQ2: Does student interest in science change significantly between the baseline and follow-up surveys? If so, are these changes larger among students at some awardee/Center sites than others?  |
| **2Purpose of Item** |
|  | A: indicates that the variable from this item is used for administrative purposes (e.g., longitudinal tracking, pre and post survey data linking) |
|  | D: indicates that the variable from this item is used in descriptive analysis |
|  | O: indicates that the variable from this item is used as an outcome |
|  | C: indicates that the variable from this item is used as a control variable |
| **3Source of Item** |
|  | A: Program specific item developed for the national evaluation of SoI |
|  | B: School and Social Experiences Questionnaire from Singh, K., Chang, M., & Dika, S. (2006). Affective and motivational factors in engagement and achievement in science. *International Journal of Learning* 12(6), 1447-9540.  |
|  | C: Test of Science Related Attitudes from Fraser, B.J. (1981). *TOSRA test of science related attitudes handbook.* Hawthorn, Victoria, Australia: Australia Council for Educational Research. |
| **4Grade Level Version of Survey** |
|  | E: Item only appears on the 4th-5th grade version of the survey (elementary level) |
|  | M: Item only appears on the 6th-9th grade version of the survey (middle school level) |
|  | B: Item appears on both versions of the survey (elementary and middle school levels) |
| **5Attitude Toward Science Scale** |
|  | Modified original scale of a four-point Likert type where 1=strongly disagree to 4=strongly agree to a five-point Likert-type where 1=Really disagree to 5=Really agree.Items had a Cronbach alpha of 0.93 in pilot tests with high school students in grades 9 through 12 (N=1589). Most of the students in the sample were White (94.7%), and in grades 9 (38.8%) and 10 (32.7%). |
| **6Career Interest in Science Scale** |  |  |  |  |
|  | Items had a Cronbach alpha of 0.72 for 7th grade and 0.70 for 8th grade in pilot tests with students in a metropolitan area of Sydney, Australia. N=1337 (n=340 7th grade students; n=335 8th grade students; n=338 9th grade students; n=324 10th grade students). |
| **7Leisure Interest in Science Scale** |  |  |  |  |
|  | Items had a Cronbach alpha of 0.93 for 7th grade and 0.92 for 8th grade in pilot tests with students in a metropolitan area of Sydney, Australia. N=1337 (n=340 7th grade students; n=335 8th grade students; n=338 9th grade students; n=324 10th grade students). |