



Pre-College Implementer Guide

Middle School Pre, Middle School Post, and
 Middle School Far Post
 High School Pre, High School Post, and High
 School Far Post
 Additional Question Sets

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I. Disciplines Covered By the AWE Surveys

There are three versions of each pre-college survey:

- 1) Engineering
- 2) Science
- 3) Computer science

Each of these surveys has 1) specific sets of questions related to the discipline; and 2) as many common questions as possible. The latter allows for the possibility of comparing participant responses across disciplines by comparing data from many organizations using these tools. Accordingly, several items deliberately use combinations of disciplines (e.g., “Are you enrolled in a special engineering or science curriculum?” or “Work that allows me to use math, computer, engineering or science skills.”). This organization of questions simplifies the adaptation of AWE surveys to programs covering more than one discipline or other STEM discipline. (See “Adapting AWE Surveys” below for more information.)

Discipline specific questions are:

Survey	Question #s
AWE Middle School Pre-Activity Survey	5-8, 10
AWE Middle School Immediate Post-Activity Survey	10-13, 15
AWE Middle School 3-6 Month Post Activity Survey	4-7, 10
AWE High School Pre-Activity Survey	5-8, 10
AWE High School Immediate Post-Activity Survey	10-13, 15
AWE High School 3-6 Month Post-Activity Survey	4-7, 10

II. Surveys and Additional Question Sets

AWE pre-college surveys comprise **core**, or basic, surveys that address typical objectives of pre-college activities and **optional question sets** that can be added to the core survey to fit the specific objectives of your activity or program. The objectives upon which the AWE surveys and question sets are based were identified through a needs assessment and literature review of STEM outreach activities.

AWE Core Instruments address “core objectives” that appeared in almost all of the activities surveyed.

AWE Survey Optional Question Sets measure objectives not included in the core instruments. These question sets can be added at any point in the survey.

III. Survey and Additional Question Set Objectives

AWE surveys are based upon a needs assessment of the most typical objectives for outreach activities. These are divided into two groups:

- **Core objectives, which are found in almost all outreach activities:**
 - Collect demographic information of participants
 - Measure increased self-efficacy in a discipline
 - Measure increased confidence
 - Measure increased career awareness
 - Measure increased interest in STEM discipline, study or career
 - Measure changed attitudes related to STEM disciplines or careers
 - (Post only) Conduct formative measure of how students evaluate activity

- **Additional question set objectives, found in many but not all outreach activities:**
 - Measure participants' increased sense of community in STEM
 - Measure increased development of specific skills
 - Recruit participants to a specific college or university or a STEM discipline.
 - Evaluate effectiveness of specific instructors.

IV. Overview of Surveys

The AWE Pre-College Surveys are listed in the table below. Downloads and complete descriptions of each survey and additional question sets are available at AWEonline.org. To access the surveys you must complete a free registration at the AWE site, go to: www.aweonline.org. Versions of all surveys are also available for online data collection via SurveyMonkey. For more information on how to use online surveys using SurveyMonkey, contact awe@engr.psu.edu.

Name of CORE AWE Survey	When to Use	Value	# of Questions	Estimated time to complete
AWE Middle and High School Pre-Activity Surveys	Participants fill out immediately before the event or receive the survey in advance of the activity and mail it back or turn it in at on-site registration. Tip: For on-site implementation, schedule a specific time for participants to complete survey.	Pre-survey questions repeat or are linked closely to post-survey questions, allowing you to compare answers. This allows you to assess whether your activity has had the desired impact.	16	10-15 mins
AWE Middle and High School Immediate Post-Activity Surveys	Participants fill out at the end of an activity, while still on site. Tip: Schedule time on the activity agenda for assessment to avoid having the survey overshadowed in end-of-activity excitement. AWE users report that effective strategies are to make it part of the final activity or have participants trade a completed survey for the activity t-shirt or hand-outs.	Immediate post-surveys allow you to compare answers provided by participants prior to the activity. They also provide valuable formative information for future activity improvements.	17	10-15 mins
AWE Middle and High School 3-6 Month Post-Activity Surveys	These surveys are mailed to participants sometime after the activity or participants are asked to fill out surveys online.	Far post surveys go beyond the enthusiastic responses of participants who have just enjoyed an activity. When asked about plans to study engineering, participants surrounded by others who enjoyed an activity, are likely to say "Yes." But will they have the same answer 3-6 months later? Far posts, while more expensive and resource intensive, provide valuable information about the long-term impact.	15	10-15 mins

V. Overview of Additional Question Sets

AWE MS and HS additional question sets are designed to be added to AWE Core instruments to cover additional specific objectives. The additional question sets are listed below.

Downloads and descriptions of each survey and additional question sets are available at www.AWEonline.org. Versions of all surveys and additional question sets are also available online, in SurveyMonkey format. For more information on how to transfer SM online surveys to your own account, contact awe@enr.psu.edu.

Name of Additional Question Set	When to Use	# of Questions	Estimated time to complete
Hands-on Activities/ Projects	Measure impact of hands-on, skills oriented activities.	6	4-5 mins
Presentations (lecture-style)	Measure impact of lecture-type presentation.	3	3-4 mins
Presenter and Activity/ Presentation Combined	Measure impact of presenters and activities when multiple activities are offered within one event. Use with hands-on activities or lecture-style presentations.	1	2-3 mins
Rating Scales for Sense of Community	Measure impact of activity on participant ability to form/identify a supportive STEM community.	4	3-4 mins
Rating Scales for Recruiting to a STEM Career and/or Institution	Measure whether activity causes participants to consider pursuing STEM studies in higher education and/or a specific institution.	4	3-4 mins

VI. Outreach Peer Observation Tool

The Outreach Activity Peer Observation Tool offers an additional method to evaluate the efficacy of an activity and the performance of presenters, facilitators and other volunteers in outreach activities. It is designed for use by peer observers of an activity, presentation, or other events. Use it to track:

- Specifics of an activity, such as demographics and timing
- Ability of an activity to engage participants
- Ability of an activity to meet objectives
- Volunteer leader performance

Results provide an additional assessment tool to help organizers:

- Deploy volunteers effectively
- Allocate resources to activities that are the most effective
- Provide information to volunteers that will help them hone their presentations or activities

When to use:

- When volunteers lead activities for your organization. This is particularly important if pre-training is not possible. Results from the surveys offer an *additional* method to assess the activity and volunteer performance and provides feedback for volunteers.
- When volunteers go into classrooms to talk about careers or guide a hands-on project. Teachers often use this time to leave the classroom. Asking teachers to complete the form or a version of the form engages him or her in the presentation and provides valuable feedback for your organization and the individual presenter.

VII. Adapting AWE Pre-College Surveys

Adapt AWE surveys to fit your activity and add or subtract sets of questions as appropriate. As you do this, remember that all AWE pre-college surveys are tested, so try to remain as true to the originals as possible. Yellow highlighting in the *downloadable paper versions* indicates where surveys should be personalized for your program by adding the program name and other information.

Note: In all cases, AWE is interested in hearing about your adaptations and creation of additional questions or sets of questions. AWE would like to consider them for inclusion in the future AWE suite of surveys so that they can be shared with others. You and/or your program will be credited on the Web site and on all downloadable documents. Send your adaptations to awe@enqr.psu.edu.

Below are examples of suggested highlighted/customized adaptations:

Example	Adaptation
Information in title of survey and in welcome statement	Add your project, organization or institution name; add contact names.
Question about course lists— <i>From the list below, check the classes you are currently taking in school this year OR if you are not currently in school, list the classes for which you are registered for your next school year.</i>	Classes offered vary greatly by state or even district. Course lists provided in AWE surveys are generalized and tested, but may not include important opportunities available to your participants (engineering or science magnet programs, etc.) or include options not available to them. To adapt the course list, contact local school districts or access state educational requirements via the Web.
Question about influential people— <i>Has anyone talked to you about becoming an engineer? Followed by table with types of people (e.g. family members, teachers, etc.)</i>	Add people to the list who are relevant to your organization or institution, or whom you suspect are important players in influencing your participants. Examples would be Girl/Boy Scout or Girls Inc. volunteer, local youth minister, etc.

Example (continued)	Adaptation (continued)
<p>Question about expectations for activity— <i>Why did you attend this activity? Followed by list of reasons to attend.</i></p>	<p>Add items to address specific objectives or the discipline focus of your activity. (suggest adding three or fewer questions to keep the survey short). Examples of possible questions to add are:</p> <ul style="list-style-type: none"> • Learn more about specific majors in college (e.g., engineering, science, computers, biology, aerospace engineering, robotics, etc.) • Learn how to write computer programs • Learn what scientists/engineers/mathematicians/computer scientists do. • Do experiments in a lab. • Design and build things. • Learn how to build a bridge, energy-efficient model house, EKG machine, paper airplane, etc.
<p>Discipline-specific questions— <i>What do engineers do? If you go to college, do you think you will pursue a career in an science-related field?</i></p>	<p>Adapt existing surveys or create additional surveys for additional disciplines. Or combine discipline questions for activities or programs covering more than one discipline. If your activity or program covers a discipline not addressed by the existing surveys, use the discipline specific questions as a template to create a new question set.</p>

VIII. Access to Online versions

All of AWE surveys are formatted online using SurveyMonkey and are available for transfer to other SurveyMonkey online accounts. AWE will also host your surveys, under specific conditions. If you are interested in either option, contact AWEonline.org.

Why SurveyMonkey? We chose for several reasons: usability for broad range of expertise, ease of functionality, effectiveness of customer and technical support, and affordability. Full explanation in [A Critical Assessment of Online Survey Tools](#).

IX. Relevant AWE tools

The AWE Project offers tools to aid in the implementation of surveys. These tools, listed below, are all available on AWEonline.org.

- Applying Research to Practice (ARP) Resources
- Gaining IRB (Institutional Review Board) or Human Subjects permission.
- Increase participation in surveys
- Data entry templates
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