

STEM

Science, Technology, Engineering, and Mathematics

Supplement to the Youth PQA

Organization name:	
Site/ Program name:	
Name of program offering(s) observed:	
Name of staff member(s) observed:	
Date scored:	



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INTRODUCTION

PURPOSE

The Science, Technology, Engineering, and Mathematics Program Quality Assessment (STEM PQA) is an instrument designed to evaluate the quality of youth programs and identify staff training needs. It consists of a set of score-able standards for best practices in afterschool programs, community organizations, schools, summer programs and other places where youth have fun, work and learn with adults. The STEM PQA is designed to empower people and organizations to envision optimal-quality programming for youth by providing a shared language for practice and decision-making and by producing scores that can be used for comparison and assessment of progress over time. The STEM PQA measures the quality of youths' experiences and promotes the creation of environments that tap the most important resource available to any youth-serving organization: a young person's motivation to engage critically with the world.

BENEFITS

The STEM PQA offers several important attributes:

- *Experience-tested approach* – The standards for best practices that make up the STEM PQA are grounded in extensive experience working with young people. Together, the scales in the instrument represent a child development approach that works.
- *Research-based rubrics* – The STEM PQA contains proven measurement rubrics that allow observers to differentiate programs in important and meaningful ways.
- *Opportunities to observe practice* – Staff using the STEM PQA must spend time watching what happens in their program.
- *Flexibility* – The STEM PQA is designed to meet a range of accountability and improvement needs, from self assessment to research and evaluation.

TERMINOLOGY

- *Form* refers to the entire group of scales used for assessment. For example: Form A – Program Offerings and Form B – Organization Practices & Policies.
- *Domain* refers to the group of scales falling under one of the sections I–VII. For example, in Form A – Program Offerings, a domain is “I. Safe Environment,” which contains scales that pertain to that domain. *Domain score* is the average of scale scores for each domain I–VII. For example, the domain “I. Safe Environment” contains five scale scores to be averaged for a domain score.
- *Scale score* refers to the average of the scores (one per item) that make up a scale. For example, the Healthy Environment scale has four items that can be scored as 1, 3 or 5 and then averaged for a scale score.
- *Item or item row* refers to a single row on the STEM PQA for which there are descriptors for scores 1, 3 and 5. Level 5 is best practice.

DEFINITIONS

- *Organization* refers to the agency that operates services for young people. An organization may be a community-based nonprofit agency, a church or temple, a private center, a neighborhood association or a school.
- *Site* refers to the physical location of the activities being observed. For example, Middleton School or Bay Area Country Club.
- *Program offerings* refer to structured activities that are led by regular staff with the same youth over time. This includes the range of scheduled services available to youth at an organization, such as classes, workshops, meetings, special events, homework help or discussion groups.
- *Session* is one scheduled period of a program offering. For example, a session might be when the photography club meets from 3 to 5 p.m. on Wednesday.
- *Staff* refers to the person or persons facilitating a session. Staff may include paid workers, volunteers or peer leaders.
- *Activities* are the planned interactions led by staff within a program offering. For example, the activities in an art club might include making a collage, learning different painting techniques and making sculptures with found objects.
- *Program hours* are the normal hours that the full range of program offerings are in session.

INTRODUCTION TO ITEMS AND SCORING

The STEM PQA items measure quality in different ways. Some items measure aspects of the environment or the way the session is structured. The bulk of these are in domain “I. Safe Environment.” Some items measure whether *staff* exhibit specific behaviors or best practice methods, or how frequently the staff carries out the practice. Some items distinguish between child-initiated behaviors that occur informally or spontaneously and those that have been set up intentionally by staff. Others measure *how many* youth have certain opportunities. It is important to note that items generally capture either staff practices or child behaviors/opportunities, but not both. Both are indicators of a quality program, although the STEM PQA and the continuous improvement approach focus on staff behaviors because that is where staff can directly make changes or improvements.

In observing and scoring, it is helpful to keep the following things in mind:

- Think about the intent of the item when scoring. Consult the handbook as needed.
- Follow through and pay attention to an entire sequence of events (e.g., child behavior, staff response, child response).
- If the item assesses youth’s opportunity for something, score based on whether the opportunity was present or explicitly offered, even if some youth do not take advantage of the opportunity.
- Score based on what you see that day, even if there were extenuating circumstances present that affected scores.
- If there are two or more staff members, score on whether any one of the staff members do a certain practice. Otherwise, focus on the primary staff member.
- *Structured* refers to the quality of being intentional, planned, prompted, initiated and/or named by the staff; it does not refer to children’s informal conversation or actions.

CONDUCTING A PROGRAM SELF ASSESSMENT

Team-based program self assessment using the STEM PQA is a highly effective, low stakes strategy for building a quality-focused culture. Program self assessment can help managers and staff co-create meaningful improvement objectives for the quality of their programming and ultimately the outcomes for their young participants.

Throughout the process, keep in mind these three aspects of a constructive program self assessment process:

- work as a team
- base scores on observational evidence
- focus on conversations about quality

1. SELECT AND TRAIN A SELF ASSESSMENT TEAM

The program self assessment team should consist of the site leader and at least two program staff, volunteers or parents. The site leader attends PQA Basics training. Team members can prepare to be a part of the program self assessment process by completing the PQA Basics training online. The site leader should also conduct a meeting or mini-training for team members using the materials shared at PQA Basics.

2. PREPARE FOR DATA COLLECTIONS

Team members collect data by taking turns observing their programs in action. Sometimes, schedules need to be rearranged, or a program manager needs to arrange coverage in order to provide the opportunity for staff to observe each other. Plan time as soon as possible following the observations for discussion and scoring.

The site teams should observe *program offerings*: structured activities that are led by regular staff with the same youth over time. Enrichment classes or afterschool clubs that get together at the same time each week for the entire school semester are a great example. Avoid homework help, open gym, unstructured computer lab time, drop-in, etc. Always notify program staff of scheduled observation ahead of time. This is not a test!

If timing and staff schedules do not allow for full observations, then try to observe at least one hour of programming, divided among self assessment team members (e.g., three people each observe for 20 minutes, four people each observe for 15 minutes). Vary observation times so that your observations include the beginning, middle and end of different sessions.

3. OBSERVE AND TAKE NOTES

When conducting an observation, find a place to sit that allows you to see and hear as much as possible without getting in the way. Take notes by hand or using a laptop. Bring a copy of the back page of the STEM PQA. You can bring the full STEM PQA to your observation, but do not write notes onto the form or try to score the form while observing.

Take notes throughout the offering on factual information (include quotes, actions, etc.). As a general rule, expect to take 3–4 or more handwritten pages (1–2 typed) of notes per 30 minutes of observation.

Your notes should be:

- Factual and objective (rather than judgmental, evaluative or impressionistic)
- Specific and detailed (rather than general)
- Accessible (language should make sense six months from now)
- Chronological (include time markers)

Your notes should include:

- Anecdotal descriptions of interactions
- Quotes of what youth and/or staff say when interacting
- Actions and language of the youth involved
- Materials lists
- Sequences of daily events and routines

At the end of the session, ask the session leader(s) any follow-up questions, as listed on the back of the PQA. After the observation, you will not score the PQA, but save your notes to use during the scoring meeting.

4. HOLD A TEAM-BASED SCORING MEETING

After all data has been collected, the site leader guides the team in scoring a single, program-wide STEM PQA Form A. This scoring process can last three hours or more and may be divided among several shorter

meetings. During the scoring meetings, the team will pool and review all anecdotal records and go through the STEM PQA item by item, selecting an anecdote and agreeing on a score for each. It is important that the team rely on the anecdotes rather than their memories to produce scores.

The most important outcome of the scoring meeting is the conversation that occurs while discussing scores and arriving at agreement. The scores can provide a reliable indication of the quality of staff interactions with youth, so it is important to be accurate.

5. ENTER SCORES

The STEM PQA produces scores at the item, scale and domain level. All scores beyond the item level are created using mathematical means, or averages. Scales are averages of items, and domains are averages of scales.

After scoring the items in Form A of the STEM PQA, you can enter the scores into the online Scores Reporter. You can access the online Scores Reporter through the Weikart Center website at www.cypq.org. The staff at the Weikart Center is available to offer technical assistance as needed.

CONDUCTING AN EXTERNAL ASSESSMENT

For an external assessment, a trained, reliable external assessor visits a site to observe a single program offering and score a PQA based on the observation.

1. ATTEND AN EXTERNAL ASSESSOR RELIABILITY TRAINING

External assessors attend an External Assessment Reliability Training to practice skills and complete a reliability check. All assessors must pass the reliability check to be endorsed as external assessors prior to conducting any site visits.

2. PREPARE FOR DATA COLLECTION

The network leader will often coordinate schedules and assign assessors to sites. External assessors should confirm the date and time of observation with the site leader and ask him or her to inform the relevant staff that they will be visiting to conduct an observation.

3. OBSERVE AND TAKE NOTES

When travelling to the assigned youth program, assessors should arrive at least 15 minutes before the scheduled observation time. Assessors will view program offerings in their entirety (usually 45-90 minutes long).

Assessors take objective observational notes which describe only observable behaviors, language and materials. They focus on the behaviors of the staff and students with whom the staff is interacting and record as many quotations as possible.

Notes should be:

- Factual and objective (rather than judgmental, evaluative, or impressionistic)
- Specific and detailed (rather than general)
- Accessible (language should make sense six months from now)
- Chronological (include time markers)

Notes should include:

- Anecdotal descriptions of interactions
- Quotes of what youth and/or staff say when interacting
- Actions and language of the youth involved
- Materials lists
- Sequences of daily events and routines

At the end of the session, the assessor asks the session leader(s) any follow-up questions, as listed on the back of the PQA. Also at the end of the session, the assessor should ask the staff who led the session the questions on the Staff Information page.

4. SCORING THE PQA

After the visit, assessors fit and score using their notes, making sure to fill out all evidence boxes and program description information.

The assessor uses the answers to the follow-up questions as evidence to score the items as applicable.

Some evidence can be cross-referenced against multiple items. In fact, items with a score of 5 may provide a full listing of relevant evidence. If an item is not applicable, assessors should place an “X” in the box for that item.

5. ENTER SCORES

The STEM PQA produces scores at the item, scale, and domain level. All scores beyond the item level are created using mathematical means, or averages. Scales are averages of items, and domains are averages of scales.

After scoring the items in the STEM PQA, the assessor can enter the scores into the online Scores Reporter. The online Scores Reporter can be accessed through the Weikart Center website at www.cypq.org. The staff at the Weikart Center is available to offer technical assistance as needed.

PROGRAM INFORMATION

(Complete for Program Self Assessment or External Assessment)

Organization name: _____ Site/Program name: _____

Name(s) of program offering(s) observed: _____

Name of staff member(s) observed: _____

Brief description of program offering(s): _____

Staff: Youth ratio in program offering(s): _____ Date scored: _____

Age(s) of youth in observed offering(s) (Circle all that apply):

K 1 2 3 4 5 6 7 8 9 10 11 12 12+

Type of program/activities observed (Check all that apply):

- | | | | | |
|--|---|--|----------------------------------|--------------------------------------|
| <input type="checkbox"/> Mentoring | <input type="checkbox"/> Tutoring | <input type="checkbox"/> Homework Help | <input type="checkbox"/> Drop-in | <input type="checkbox"/> Faith-based |
| <input type="checkbox"/> Camp | <input type="checkbox"/> Visual Art | <input type="checkbox"/> Dance | <input type="checkbox"/> Drama | <input type="checkbox"/> Math |
| <input type="checkbox"/> Life skills development | <input type="checkbox"/> Outreach | <input type="checkbox"/> Prevention | <input type="checkbox"/> Sports | <input type="checkbox"/> Science |
| <input type="checkbox"/> Leadership development | <input type="checkbox"/> Service learning | <input type="checkbox"/> Other | _____ | |

Type of organization (Please check not more than two):

- A nationally affiliated nonprofit (e.g., YMCA, Boys & Girls Club, Camp Fire USA, Scouts, Future Farmers of America)
- Local nonprofit (e.g., local community-based or faith-based organization)
- Local school organization (e.g., public, charter, private school)
- Unit of city or county government (e.g., Department of Recreation, Health Bureau)
- State government
- Local for-profit organization (e.g., bowling alley)

STAFF INFORMATION

(Complete for External Assessment ONLY)

These questions should be addressed to the staff member leading the offering. This data is being collected for purposes of instrument validation and will not ever be linked to the identity of the staff person being observed. All responses will remain confidential and staff may decline to answer any question.

How many years have you worked in programs like this one?

Number of years

How many years have you worked in this program?

Number of years

Are you a certified school-day teacher?

Yes No

Are you a certified social worker?

Yes No

Which youth development framework training(s) have you had? (Check all that apply.)

- | | | |
|--|--|--|
| <input type="checkbox"/> Search Assets | <input type="checkbox"/> Advancing Youth Development | <input type="checkbox"/> Bringing Yourself to Work |
| <input type="checkbox"/> David P. Weikart Center for Youth Program Quality | <input type="checkbox"/> HighScope | |

What is the highest level of education that you have completed? (Check only one.)

- | | | |
|--|---|--|
| <input type="checkbox"/> GED | <input type="checkbox"/> High school diploma | <input type="checkbox"/> Some College but no degree yet/Associate's Degree |
| <input type="checkbox"/> Bachelor's Degree | <input type="checkbox"/> Graduate program but no degree yet | <input type="checkbox"/> Master's Degree |
| <input type="checkbox"/> Doctorate | <input type="checkbox"/> Other professional degree after BA | <input type="checkbox"/> None of the above |

EMOTIONAL SAFETY | Psychological and emotional safety is promoted.

ITEMS			SUPPORTING EVIDENCE/ANECDOTES				
1. 1	The emotional climate of the session is predominantly negative (e.g., disrespectful, tense, exclusive, even angry or hostile); negative behaviors, such as rudeness, bragging, insults, “trash talking,” negative gestures or other such actions are not mediated by either youth or staff.	3	The emotional climate of the session is neutral or characterized by both positive and negative behaviors.	5	The emotional climate of the session is predominantly positive (e.g., mutually respectful, relaxed, supportive; characterized by teamwork, camaraderie, inclusiveness, and an absence of negative behaviors). Any playful negative behaviors (not considered offensive by parties involved) are mediated (countered, curtailed, defused) by staff or youth.	<input type="checkbox"/>	
2. 1	Comments or slurs intended to hurt someone who is present explicitly indicate religious, ethnic, class, gender, ability, appearance or sexual orientation bias(es).	3	There is evidence (e.g., comments or slurs) of religious, ethnic, class, gender, ability, appearance or sexual orientation bias, but comments are not directed at anyone present.	5	There is no evidence of bias; rather, there is mutual respect for and inclusion of others of a different religion, ethnicity, class, gender, ability, appearance or sexual orientation.	<input type="checkbox"/>	

HEALTHY ENVIRONMENT | The physical environment is safe and free of health hazards.

ITEMS			SUPPORTING EVIDENCE/ANECDOTES
<p>1. 1 There are major safety and health hazards (e.g., broken equipment or supplies, unmopped spills, flammable and/or toxic materials) affecting the program space.</p>	<p>3 There are minor safety and health concerns (e.g., dirty floors or furniture, wobbly furniture, program materials in disarray) affecting the program space.</p>	<p>5 The program space is free of health and safety hazards.</p>	<input type="checkbox"/>
<p>2. 1 There are major sanitary concerns (e.g., unsanitary toilet facilities, dirty or clogged drains, open or spoiling food, overflowing trash container) affecting the program space.</p>	<p>3 There are minor sanitary concerns (e.g., unswept floor, dirty tables or chairs) affecting the program space.</p>	<p>5 The program space is clean and sanitary.</p>	<input type="checkbox"/>
<p>3. 1 There are major inadequacies in either ventilation or lighting in the program space.</p>	<p>3 Ventilation or lighting is inadequate in some areas in the program space.</p>	<p>5 Ventilation and lighting are adequate in the program space.</p>	<input type="checkbox"/>
<p>4. 1 The temperature is uncomfortable (e.g., it is too hot or too cold) in the program space.</p>	<p>3 The temperature is uncomfortable for some activities and/or in some areas of the program space.</p>	<p>5 The temperature is comfortable for all activities in the program space.</p>	<input type="checkbox"/>

EMERGENCY PREPAREDNESS | Appropriate emergency procedures and supplies are present.

Note: Local fire codes govern the number and location of fire extinguishers.

ITEMS				SUPPORTING EVIDENCE/ANECDOTES
<p>1. 1 There are no written emergency procedures (e.g., fire escape route, lost swimmer drill, severe weather instructions), or staff are unable to locate procedures.</p>	<p>3 Written emergency procedures are not posted, but staff is able to locate them.</p>	<p>5 Written emergency procedures are posted in plain view.</p>	<input type="checkbox"/>	<p>Where are the emergency procedures posted?</p>
<p>2. 1 There is no charged fire extinguisher accessible from the program space.</p>	<p>3 At least one charged fire extinguisher is accessible (but not plainly visible) from the program space.</p>	<p>5 At least one charged fire extinguisher is accessible and visible from the program space.</p>	<input type="checkbox"/>	<p>Is there an accessible fire extinguisher?</p>
<p>3. 1 A complete first-aid kit is not accessible from the program space.</p>	<p>3 At least one complete first-aid kit is accessible (but not plainly visible) from the program space.</p>	<p>5 At least one complete first-aid kit is accessible and visible from the program space.</p>	<input type="checkbox"/>	<p>Is there an accessible first-aid kit?</p>
<p>4. 1 Other safety or emergency equipment appropriate to the activities is not available to the program offering.</p>	<p>3 Other safety and/or emergency equipment appropriate for the program offering is in poor condition, and/or staff cannot locate it.</p>	<p>5 Other appropriate safety and emergency equipment (e.g., for water or vehicle safety, sports, or repairs) is available to the program offering as needed, can be located by staff, and is maintained in full-service condition.</p>	<input type="checkbox"/>	<p>Does the site have any special safety or emergency equipment? If other equipment is not needed, do not rate. Write an "X" in the box at the left.</p>
<p>5. 1 Entrances to the indoor program space are unsupervised during program hours.</p>	<p>3 At least one entrance to the indoor program space is supervised for security during program hours but others are not, or entrance(s) are sometimes supervised and sometimes not.</p>	<p>5 All entrances to the indoor program space are supervised for security during program hours. (Can include electronic security system.)</p>	<input type="checkbox"/>	<p>Are entrances to the indoor program space supervised?</p>
<p>6. 1 Access to outdoor program space is unsupervised during program hours.</p>	<p>3 Access to outdoor program space is sometimes supervised during program hours.</p>	<p>5 Access to outdoor program space is supervised during program hours.</p>	<input type="checkbox"/>	<p>Is access to the outdoor program space supervised? If there is no outdoor program space, do not rate. Write an "X" in the box at the left.</p>

ACCOMMODATING ENVIRONMENT | Program space and furniture accommodate the activities.

ITEMS			SUPPORTING EVIDENCE/ANECDOTES
<p>1. 1 Program space is crowded, without sufficient room to move freely.</p>	<p>3 Program space is crowded in some areas.</p>	<p>5 Program space allows youth and adults to move freely while carrying out activities (e.g., room accommodates all participants without youth blocking doorways, bumping into one another and crowding).</p>	<div style="text-align: center;"><input type="checkbox"/></div>
<p>2. 1 Program space is not suitable for activities offered.</p>	<p>3 Program space is suitable for some of the activities offered.</p>	<p>5 Program space is suitable for all activities offered (e.g., furniture and room support small and large groups; if athletic activity is offered, then program space supports this).</p>	<div style="text-align: center;"><input type="checkbox"/></div>
<p>3. 1 Furniture is neither comfortable nor of sufficient quantity for the program offering.</p>	<p>3 Furniture is either comfortable or of sufficient quantity for the program offering (but not both).</p>	<p>5 Furniture is comfortable and of sufficient quantity for all youth participating in the program offering.</p>	<div style="text-align: center;"><input type="checkbox"/></div> <p>If there is no furniture and none required, do not rate. Write an "X" in the box at the left.</p>
<p>4. 1 Physical environment cannot be modified to meet the needs of the program offering.</p>	<p>3 Physical environment can be modified to meet the needs of the program offering, but youth and/or staff are discouraged from doing so.</p>	<p>5 Physical environment can be modified to meet the needs of the program offering (e.g., furniture and/or supplies can be moved).</p>	<div style="text-align: center;"><input type="checkbox"/></div> <p>If there is no furniture and none required, do not rate. Write an "X" in the box at the left.</p> <p>Can the furniture be moved around?</p>

NOURISHMENT | Healthy food and drinks are provided.

ITEMS			SUPPORTING EVIDENCE/ANECDOTES
1. 1 Drinking water is not available.	3 Drinking water is available but not easily accessible (e.g., water is located away from program space; faucet is difficult to use).	5 Drinking water is available and easily accessible to all youth.	<input type="checkbox"/>
2. 1 Food or drinks are not available to youth during the session.	3 Food and drinks are available at appropriate times, but there is not enough for every youth to receive a serving.	5 Food and drinks are plentiful and available at appropriate times for all youth during the session.	<input type="checkbox"/> If a meal or snack is not necessary because of structure of program offering, do not rate. Write an "X" in the box at the left.
3. 1 Available food or drink is not nutritious (e.g., junk food – high in fat, sugar or hydrogenated oils).	3 Some available food or drink is not nutritious and some is healthy.	5 Available food and drink is healthy (e.g., there are vegetables, fresh fruit, real juice).	<input type="checkbox"/> If no food or drink is served, do not rate. Write an "X" in the box at the left.

WARM WELCOME | Staff provides a welcoming atmosphere.

ITEMS			SUPPORTING EVIDENCE/ANECDOTES
<p>1. 1 No youth are greeted by staff as they arrive or at the start of the session.</p>	<p>3 Some youth are greeted by staff as they arrive or at the start of the session.</p>	<p>5 All youth are greeted by staff as they arrive or at the start of the session.</p>	<input type="checkbox"/>
<p>2. 1 All youth are greeted by staff as they arrive or at the start of the session.</p>	<p>3 Staff sometimes uses a negative tone of voice and disrespectful language and sometimes uses a warm tone of voice and respectful language.</p>	<p>5 Staff mainly uses a warm tone of voice and respectful language.</p>	<input type="checkbox"/>
<p>3. 1 Staff generally frowns or scowls, uses unfriendly gestures and avoids eye contact.</p>	<p>3 Staff sometimes exhibits unfriendly behaviors and sometimes uses a friendly approach.</p>	<p>5 Staff generally smiles, uses friendly gestures and makes eye contact.</p>	<input type="checkbox"/>

SESSION FLOW | Session flow is planned, presented and paced for youth.

ITEMS			SUPPORTING EVIDENCE/ANECDOTES
1. 1 Staff does not start or end session within 10 minutes of scheduled time.	3 Staff either starts or ends session within 10 minutes of scheduled time (but not both).	5 Staff starts and ends session within 10 minutes of scheduled time.	<input type="checkbox"/> Record the following: Scheduled starting time _____ Actual starting time _____ Scheduled end time _____ Actual end time _____
2. 1 Staff does not have materials and supplies ready to begin activities.	3 Staff has some materials and supplies ready to begin activities, or staff has materials and supplies ready to begin only some activities.	5 Staff has all materials and supplies ready to begin all activities (e.g., materials are gathered, set up).	<input type="checkbox"/> If no materials/supplies are required, do not rate. Write an "X" in the box at the left.
3. 1 There are only enough materials and supplies prepared for less than half of the youth to begin activities.	3 There are enough materials and supplies prepared for more than half, but not all, of the youth to begin activities.	5 There are enough materials and supplies prepared for all youth to begin activities.	<input type="checkbox"/> If no materials/supplies are required, do not rate. Write an "X" in the box at the left.
4. 1 Staff does not explain any activities clearly.	3 Staff explains some activities clearly.	5 Staff explains all activities clearly (e.g., youth appear to understand directions; sequence of events and purpose are clear).	<input type="checkbox"/>
5. 1 There is not an appropriate amount of time for more than one activity.	3 There is an appropriate amount of time for all but one activity (e.g., for one activity, most youth either do not finish or finish early with nothing to do).	5 There is an appropriate amount of time for all of the activities (e.g., youth do not appear rushed; most youth who are generally on task finish activities; most youth do not finish significantly early with nothing planned to do).	<input type="checkbox"/>

ACTIVE ENGAGEMENT | Activities support active engagement.

ITEMS			SUPPORTING EVIDENCE/ANECDOTES
<p>1. 1 The activities provide no opportunities for youth to engage with either materials or ideas or to improve a skill through guided practice; activities mostly involve waiting, listening, watching and repeating.</p>	<p>3 The activities provide opportunities for youth to engage with materials or ideas or to improve a skill through guided practice for less than half of the time.</p>	<p>5 The activities involve youth in engaging with (creating, combining, reforming) materials or ideas or improving a skill through guided practice for at least half of the time.</p>	<input type="checkbox"/>
<p>2. 1 During activities, staff does not provide any youth structured opportunities to talk about (or otherwise communicate) what they are doing and what they are thinking about to others.</p>	<p>3 During activities, staff provides some youth a structured opportunity to talk about (or otherwise communicate) what they are doing and what they are thinking about to others (e.g., staff asks some youth to explain what they are doing or why, staff has half the youth explain their art project to someone else).</p>	<p>5 During activities, staff provides all youth a structured opportunity to talk about (or otherwise communicate) what they are doing and what they are thinking about to others (e.g., each youth explains the reasoning behind his or her design to staff; staff assigns youth to small groups to work on a shared task).</p>	<input type="checkbox"/>
<p>3. 1 The activities focus almost exclusively on abstract learning or concepts, providing limited or no related concrete experiences (activities almost exclusively consist of learning about a topic; lecture format).</p>	<p>3 The activities focus almost exclusively on concrete experiences, providing limited or no opportunities to engage with related abstract learning or concepts (activities almost entirely consist of youth doing, practicing, or experiencing, without learning about or discussing the how, what, or why).</p>	<p>5 The activities balance concrete experiences involving materials, people and projects (e.g., field trips, experiments, interviews, practicing dance routines, creative writing) with abstract learning or concepts (e.g., learning, talking about a topic; lectures; staff providing diagrams, formulas).</p>	<input type="checkbox"/>
<p>4. 1 The activities do not (will not) lead to tangible products or performances.</p>	<p>3 The activities lead (or will lead) to tangible products or performances, but do not reflect ideas or designs of youth (e.g., youth will perform dances selected by staff, all youth make bird houses according to the design supplied by staff.)</p>	<p>5 The program activities lead (or will lead in future sessions) to tangible products or performances that reflect ideas or designs of youth (e.g. youth explain their projects to whole group, all create dance routines to perform later, youth create their own sculptures).</p>	<input type="checkbox"/>

SKILL-BUILDING | Staff supports youth in building skills.

ITEMS			SUPPORTING EVIDENCE/ANECDOTES
<p>1. 1 Staff never mentions a specific learning or skill-building focus for the session or activity (e.g., objective, learning target, goal).</p>	<p>3 Staff tells youth a specific learning or skill-building focus for the session or activity (e.g., objective, learning target, goal) but the focus is not clearly linked to the activity.</p>	<p>5 Staff tells youth a specific learning or skill-building focus for the session or activity (e.g., objective, learning target, goal) and the focus is clearly linked to the activity (e.g., students do activity related to focus, language from focus is described in activity).</p>	<input type="checkbox"/>
<p>2. 1 Staff does not encourage youth to try out skills or attempt higher levels of performance.</p>	<p>3 Staff encourages some youth to try out skills or attempt higher levels of performance.</p>	<p>5 Staff encourages all youth to try out skills or attempt higher levels of performance.</p>	<input type="checkbox"/>
<p>3. 1 Staff does not model skills.</p>	<p>3 Staff models skills for some youth.</p>	<p>5 Staff models skills for all youth.</p>	<input type="checkbox"/>
<p>4. 1 Staff does not break difficult task(s) into smaller, simpler steps for any youth or there are no tasks of sufficient difficulty to warrant explaining steps.</p>	<p>3 Staff breaks difficult task(s) into smaller, simpler steps for some youth.</p>	<p>5 Staff breaks difficult task(s) into smaller, simpler steps for all youth (e.g., steps are explained in sequence; instructions are provided for specific steps; examples of completed steps are shared).</p>	<input type="checkbox"/>
<p>5. 1 When youth struggle (with errors, imperfect results or failure), staff, even once, responds with sarcasm, condescension, criticism, punishment, or making fun of the child.</p>	<p>3 When youth struggle (with errors, imperfect results or failure), staff sometimes does not respond with learning supports or encouragement (e.g., numerous youth are raising their hands for help, but the staff does not get around to responding to all of them; staff ignores struggling youth).</p>	<p>5 When youth struggle (with errors, imperfect results or failure), staff always provides learning supports or encouragement (e.g., youth are helped to problem solve, encouraged to try another approach, told why an error was made, encouraged to keep trying, given guidance or explanation when needed).</p>	<input type="checkbox"/>
			<p>If no youth struggle with imperfect results, do not score. Write an "X" in the box at the left. Expect to score this item if item 2 above scores a 3 or 5,</p>

SKILL-BUILDING (continued) | Staff supports youth in building skills.

ITEMS			SUPPORTING EVIDENCE/ANECDOTES
STEM PQA Supplemental Item			
<p>6. 1 Staff attribute success or failure in STEM to ability (e.g., "Great job! You're so smart!").</p>	<p>3 Staff do not attribute success or failure in STEM to either ability or effort/attention/persistence.</p>	<p>5 Staff attribute STEM success to effort, attention, practice or persistence (e.g. "Your brain is like a muscle, the more you exercise it, the better it works", "It may take some extra practice, but you'll get better at it." "I see your effort paid off.")</p>	<input type="checkbox"/>
<p>7. 1 There are fewer than two instances with different individual youth in which staff-youth conversation includes substantive back and forth dialogue about offering content.</p>	<p>3 There are two or three instances with different individual youth in which staff-youth conversation includes substantive back and forth dialogue about offering content.</p>	<p>5 There are more than three instances with different individual youth in which staff-youth conversation includes substantive back and forth dialogue about offering content (i.e. staff talks, youth responds with more than a word or two, staff talks, youth talks more, etc.).</p>	<input type="checkbox"/>

ENCOURAGEMENT | Staff supports youth with encouragement.

Note: Open-ended questions do not have predetermined, correct answers; they seek the opinions, thoughts and ideas of youth.

ITEMS			SUPPORTING EVIDENCE/ANECDOTES
1. 1 Staff does not support contributions or accomplishments of youth in either of the ways described for a score of 3 or 5, or simply don't support youth at all.	3 Staff supports many contributions or accomplishments of youth but use subjective or evaluative comments, such as "Good job!", "I like it!" or "You're so smart!"	5 Staff supports at least some contributions or accomplishments of youth by acknowledging what they've said or done with specific, non-evaluative language (e.g., "Yes, the cleanup project you suggested is a way to give back to the community," "I can tell from the audience response that you put a lot of thought into the flow of your video"). <i>STEM example: "The systematic approach you suggested is the type of approach scientists have to use."</i>	<input type="checkbox"/>
2. 1 Staff rarely or never asks open-ended questions.	3 Staff makes limited use of open-ended questions (e.g., only uses them during certain parts of the activity or repeats the same questions).	5 Staff makes frequent use of open-ended questions (e.g., staff asks open-ended questions throughout the activity and questions are related to the context, most youth have the opportunity to answer questions that seek opinions or require thoughtful answers).	<input type="checkbox"/>
3. 1 Staff is not actively involved with youth except for brief introductions, endings or transitions (e.g., they are physically separated from youth or do not interact with them).	3 Staff (or some of the staff) is sometimes or intermittently, actively involved with youth.	5 Staff is almost always actively involved with youth (e.g., they provide directions, answer questions, work as partners or team members, check in with individuals or small groups).	<input type="checkbox"/>
STEM PQA Supplemental Item			
4. 1 Staff do not encourage creativity, curiosity, or imagination.	3 Staff encourage creativity, curiosity, or imagination in some youth (e.g., Staff encourage some youth to think "outside of the box"; have some youth visualize or imagine something; show appreciation for artistic or unique contributions; encourage youth to "wonder").	5 Staff encourage nearly all youth in using their creativity, curiosity, or imagination (e.g., Staff encourage youth to think "outside of the box"; have youth visualize or imagine something; show appreciation for artistic or unique contributions; encourage youth to "wonder").	<input type="checkbox"/>

BELONGING | Youth have opportunities to develop a sense of belonging.

ITEMS			SUPPORTING EVIDENCE/ANECDOTES
1. 1 Staff does not provide opportunities for youth to get to know each other (e.g., the entire session is structured so youth have no time where talking among themselves is allowed or encouraged).	3 Staff provides informal opportunities for youth to get to know each other (e.g., youth engage in informal conversations, youth get to know each other as a by-product of an activity).	5 Staff provides structured opportunities with the purpose of helping youth get to know each other (e.g., there are team-building activities, introductions, personal updates, welcomes of new group members, icebreakers).	<input type="checkbox"/>
2. 1 Youth exhibit evidence of excluding peers (e.g., youth are avoided or ostracized by other youth, "I don't want to sit with her – she's not my friend") and staff does not explicitly promote more inclusive relationships (e.g., suggest ways to include others, introduce excluded youth, say, "Remember, being inclusive is one of our ideals").	3 Youth exhibit some evidence of excluding peers and staff intervenes, but not sufficiently to end exclusion (e.g., staff introduces a newcomer to other youth, but the newcomer is treated coolly and avoided or ignored; staff intervenes in some instances of exclusionary behavior but not others).	5 Youth do not exhibit any exclusion or staff successfully intervenes if exclusive behavior occurs (e.g., staff introduces newcomer to other youth and they then include her, staff successfully suggests including a lone youth in a game).	<input type="checkbox"/>
3. 1 Youth do not identify with the program offering (e.g., many youth complain about or express dislike of the program offering or activities).	3 Youth do not strongly identify with the program offering but do not complain or express dislike.	5 Youth strongly identify with the program offering (e.g., hold one another to established guidelines, use ownership language, such as "our program," engage in shared traditions such as shared jokes, songs, gestures).	<input type="checkbox"/>
4. 1 Staff does not provide opportunities to acknowledge the achievements, work, or contributions of youth.	3 Staff provides opportunities to acknowledge the achievements, work, or contributions of some youth, but opportunities are unscheduled or impromptu (e.g. staff spontaneously asks two youth show off their dance moves to the group).	5 Staff provides structured opportunities (e.g., group presentations, sharing times, upcoming recognition celebrations, exhibitions, performances) to publicly acknowledge the achievements, work, or contributions of at least some youth.	<input type="checkbox"/>

COLLABORATION | Youth have opportunities to collaborate and work cooperatively with others.

ITEMS			SUPPORTING EVIDENCE/ANECDOTES
<p>1. 1 Staff does not provide opportunities for youth to work cooperatively as a team or in a group.</p>	<p>3 Staff provides opportunities for some youth to work cooperatively as a team or in a group.</p>	<p>5 Staff provides opportunities for all youth to work cooperatively as a team or in a group.</p>	<input type="checkbox"/>
<p>2. 1 Staff does not provide opportunities for interdependent youth roles.</p>	<p>3 Staff provides the opportunity for some youth to participate in activities with interdependent roles.</p>	<p>5 Staff provides all youth opportunities to participate in activities with interdependent roles (i.e., youth have different tasks or roles such as data collector, record keeper, leader, timer, on-line researcher, writer).</p>	<input type="checkbox"/>
<p>3. 1 Staff does not provide opportunities for youth to work toward shared goals.</p>	<p>3 Staff provides opportunities for some youth to work toward shared goals.</p>	<p>5 Staff provides opportunities for all youth (groups or individuals) to work toward shared goals (e.g., team or group complete tasks, build things, create performances; shared goals/end-states are named by staff or youth as part of the activity).</p>	<input type="checkbox"/>

LEADERSHIP | Youth have opportunities to act as group facilitators and mentors.

ITEMS			SUPPORTING EVIDENCE/ANECDOTES
1. 1 Staff does not provide all youth opportunities to practice group-process skills.	3 Staff provides all youth at least a limited opportunity to practice group-process skills (e.g., a full group discussion is long enough for all youth to contribute, youth briefly share in pairs).	5 Staff provides all youth multiple or extended opportunities to practice group-process skills (e.g., contribute ideas or actions to the group, do a task with others, take responsibility for a part).	<input type="checkbox"/>
2. 1 Staff does not provide opportunities for youth to mentor an individual.	3 Staff provides opportunities for some youth to mentor an individual.	5 Staff provides opportunities for all youth to mentor an individual (e.g., youth teach or coach each other).	<input type="checkbox"/>
3. 1 Staff does not provide opportunities for youth to lead a group.	3 Staff provides opportunities for some youth to lead a group (e.g some youth lead warm-up exercises, some youth lead a small group discussion.)	5 Staff provides all youth one or more opportunities to lead a group (e.g., teach others; lead a discussion, song, project, event, outing or other activity).	<input type="checkbox"/>

ADULT PARTNERS | Youth have opportunities to partner with adults.

ITEMS			SUPPORTING EVIDENCE/ANECDOTES
1. 1 Staff rarely shares or attempts to share control of activities with youth.	3 Staff attempts to share control with youth but ends up controlling most activities themselves.	5 Staff shares control of most activities with youth, providing guidance and facilitation while retaining overall responsibility (e.g., staff uses youth leaders, semiautonomous small groups or individually guided activities).	<input type="checkbox"/>
2. 1 Staff provides no explanation or reason for behavioral expectations, guidelines or directions given to youth.	3 Staff provides an explanation or reason for some behavioral expectations, guidelines or directions given to youth.	5 Staff provides an explanation or reason for every behavioral expectation, guideline or direction given to youth.	<input type="checkbox"/>

PLANNING | Youth have opportunities to make plans.

ITEMS			SUPPORTING EVIDENCE/ANECDOTES
1. 1 Staff does not provide opportunities for youth to make plans for projects or activities.	3 Staff provides at least one opportunity for youth (individual or group) to make plans for a project or activity (e.g., how to spend their time, how to do a task).	5 Staff provides multiple opportunities for youth (individual or group) to make plans for projects and activities, (e.g., how to spend their time, how to do a task).	<input type="checkbox"/>
2. 1 There is no planning for projects or activities or no identifiable planning strategies are used.	3 When planning projects or activities, at least one identifiable planning strategy is used.	5 In the course of planning the projects or activities, two or more planning strategies are used (e.g., brainstorming, idea webbing and backwards planning).	<input type="checkbox"/>
STEM PQA Supplemental Item			
3. 1 No youth are encouraged to set project- or program-related goals.	3 Some youth are encouraged to set project- or program-related goals (e.g., how much they want to accomplish during the session on a particular project, what they want to achieve/learn during the session or program cycle). STEM example: some youth are encouraged to set goal of figuring out if there is enough open space on their school property to add another basketball court.	5 All youth are encouraged to set project- or program-related goals (e.g., how much they want to accomplish during the session on a particular project, what they want to achieve/learn during the session or program cycle). STEM examples: youth set goal to reintroduce native species to nearby field during summer program, finish go-cart's steering mechanism on Tuesday, or create website for their program.	<input type="checkbox"/>
4. 1 The activities do not provide opportunities to create a preliminary design for the functioning or attributes of an object.	3 Some youth have an opportunity to create a preliminary design for the functioning or attributes of an object. (e.g. Decide how many wheels your model car needs", "How do you want the poster to look?" "What changes would you make to make the website easier to use?").	5 Nearly all youth have an opportunity to create a preliminary design for functioning, or attributes of an object.(e.g. "Decide how many wheels your model car needs" "You design what features your Lego robot needs", " How do you want the poster to look?" "How would you make to make the website easier to use?").	<input type="checkbox"/> Note: The key is that the youth have planned or conceptualized how they want to have an object look or function. The youth do not have to have a written design or plan.

CHOICE | Youth have opportunities to make choices based on their interests.

Note: (a) Discrete refers to a finite list of specific alternatives. (b) Open-ended indicates nondiscrete, open possibilities within some boundaries. (c) All youth refers to situations where all youth make individual choices or situations where all youth participate in group decision making.

ITEMS			SUPPORTING EVIDENCE/ANECDOTES
1. 1 Staff does not provide opportunities for all youth to make content choices.	3 All youth have opportunities to choose among content alternatives, but choices are limited to discrete choices presented by the leader. STEM examples: youth may select from list of plants for garden project, may either build bridge or bat house, pick either isosceles or equilateral triangles to draw.	5 All youth have the opportunity to make at least one open-ended content choice within the content framework of the activities (youth decide topics within a given subject area, subtopics, or aspects of a given topic). STEM examples: youth decide on an endangered species to learn about, youth choose what type of simple machine to build).	<input type="checkbox"/>
2. 1 Staff does not provide opportunities for all youth to make process choices.	3 All youth have opportunities to choose among process alternatives, but choices are limited to discrete choices presented by the leader. STEM example: youth choose how to increase plant growth—pick compost, manure or fertilizer.	5 All youth have the opportunity to make at least one open-ended process choice (e.g., youth decide roles, order of activities, tools or materials, or how to present results). STEM example: youth decide how to plant garden—who waters, plants, weeds or how often, decide how to make robot move.	<input type="checkbox"/>

REFLECTION | Youth have opportunities to reflect.

Note: Reflect means to review, summarize and/or evaluate recent events or activities. Reflections are usually expressed by talking with others and/or in writing (a journal or report, for example).

ITEMS			SUPPORTING EVIDENCE/ANECDOTES
1. 1 Staff does not engage youth in an intentional process of reflecting on what they have done.	3 Staff engages some youth in an intentional process of reflecting on what they have done.	5 Staff engages all youth in an intentional process of reflecting on what they have done (e.g., writing in journals; reviewing minutes; sharing progress, accomplishments or feelings about the experience).	<input type="checkbox"/>
2. 1 Staff does not encourage youth to share what they have done with others or to reflect on their experiences.	3 Staff uses at least one identifiable strategy to help youth to share what they have done and reflect on their experiences (e.g., staff asks youth, "What did you do today?").	5 Staff uses two or more strategies to encourage youth to share what they have done and reflect on their experiences (e.g., writing, role playing, using media or technology, drawing, using props).	<input type="checkbox"/>
3. 1 Staff dismisses feedback from youth who initiate it, or youth have no opportunities to provide feedback on the activities.	3 Staff is receptive to feedback initiated by youth on the activities but does not solicit it.	5 Staff initiates structured opportunities for youth to give feedback on the activities (e.g., staff asks feedback questions, provides session evaluations).	<input type="checkbox"/>
4. 1 In the course of the program offering, staff does not provide structured opportunities for youth to make presentations to the whole group.	3 In the course of the program offering, staff provides some youth opportunities to make presentations to the whole group.	5 In the course of the program offering, staff provides all youth opportunities to make presentations to the whole group.	<input type="checkbox"/> In the course of the program offering, do youth make presentations?

CONNECTIONS | Staff connect activities to other learning, experiences, issues, and applications.

ITEMS			SUPPORTING EVIDENCE/ANECDOTES
<p>1. 1 Staff do not help youth connect current activity to personal experiences or previous knowledge related to STEM activity.</p>	<p>3 Once during the session, staff help youth connect current activity to personal experiences or previous knowledge (e.g. “Race car drivers need to understand the chemistry of different types of fuel”).</p>	<p>5 More than once, staff help youth connect current activity to personal experiences, applications, or previous knowledge (e.g. “Did you measure angles when building your deck?” “You could use this spreadsheet to record babysitting money”).</p>	<input type="checkbox"/>
<p>2. 1 Staff do not help youth connect current activity to broader societal problems or ethical issues related to STEM activity.</p>	<p>3 Once during the session, staff help youth connect current activity to broader societal problems or ethical issues.</p>	<p>5 More than once, staff help youth connect current activity to broader societal problems <u>or</u> ethical issues (e.g. “Can you see that fertilizer run-off contributes to water pollution? Using more solar power, like we did with our go-cart, could reduce dependence on oil”).</p>	<input type="checkbox"/>
<p>3. 1 Staff do not help youth connect current activity to careers, or practical applications related to STEM activity.</p>	<p>3 Once during the session, staff help youth connect current activity to careers, career preparation, or job-related activities (e.g. “Engineers use math when they design bridges”).</p>	<p>5 More than once, staff help youth connect current activity to careers, career preparation, or job-related activities (e.g. “There are a number of college majors related to computers”).</p>	<input type="checkbox"/>
<p>4. 1 Staff do not address connections among STEM concepts or disciplines.</p>	<p>3 One time during session, a staff member calls attention to connections among STEM concepts or disciplines (e.g. “How might doctors and nurses at a hospital use a computer network to save lives?”; “Understanding angles is also important in physics”).</p>	<p>5 More than once, staff call attention to connections among STEM concepts or disciplines (e. g. “An eco-system is affected by geology, climate, and biology: “Understanding angles is also important in physics”; “How might it affect the local wildlife population if engineers removed more pollutants from the water?”).</p>	<input type="checkbox"/>

SCIENTIFIC REASONING | Staff support development of scientific reasoning.

Practice does NOT occur	Practice occurs, but NOT ALL youth/teams engaged	Staff enacts practice AND all youth /teams engaged		SUPPORTING EVIDENCE/ANECDOTES
1	3	5 Staff support youth in identifying a guiding question (e.g. we want to know if more fish live 300 feet upstream from a sewage pipe than 300 feet below it; how tall is the flag pole in front of the school? How much faster does our computer download if we add x amount of RAM?).	<input type="checkbox"/>	
1	3	5 Staff support and facilitate youth understanding of steps of the scientific method (hypothesize, test, conclude, replicate) or STEM design process (analyze, design, implement, test, operate) (e.g. "What steps are there to designing a website?, a bridge made of toothpicks? "If your hypothesis is that smaller birds would eat smaller seeds, first you could test by that putting different size seeds in different feeders, observing, then concluding" "First figure out what you want your robot to do, then design it and test to see if it works correctly").	<input type="checkbox"/>	
1	3	5 Staff ask youth to make predictions, conjectures or hypotheses (e.g. "if you..., then what will happen?" What will happen if you put baking soda in vinegar? Why do you think it will fizz?).	<input type="checkbox"/>	
1	3	5 Staff support youth in using a simulation, experiment or model to answer questions, explore solutions, or test hypotheses (e.g., Youth run a robotics program on a laptop to determine whether it does what they expect it to; Youth try an alternate way to solve an equation and test their result against another example; Youth sample several material types to see which lasts longest when exposed to the elements.).	<input type="checkbox"/>	
1	3	5 Staff support youth in analyzing data to draw conclusions (e.g., after an experiment, youth are asked to use results to make a generalization, "Your heartbeat increases when you exercise" or "The fastest way to return to the website is to use a bookmark" or "In the survey data we gathered about the election, more people agreed with Candidate A than Candidate B" or "Based on our trials, the large, round tires are best for the rocky terrain.").	<input type="checkbox"/>	

OBSERVATION AND MEASUREMENT | Staff support in learning observation and measurement skills.

Practice does NOT occur	Practice occurs, but NOT ALL youth/teams engaged	Staff enacts practice AND all youth /teams engaged	<input type="checkbox"/>	SUPPORTING EVIDENCE/ANECDOTES
1	3	5 Staff support youth in collecting data or measuring (e.g., Youth use rulers or yardsticks to measure length; Youth use a balance to compare weights; Youth use a thermometer to measure temperature; Youth use a motion sensor to detect movement; Youth count number of different species of birds observed in specified location, number of hits on a website).	<input type="checkbox"/>	
1	3	5 Staff support youth in recording data or observations about events, actions and objects (e.g., Youth record temperature changes as a substance is exposed to heat; Youth place markings on the floor to represent the distance traveled by balls of different sizes; Youth place a bent coat hanger on the grass and draw a picture of what they see within it; Youth use a calculator to create a table using an equation).	<input type="checkbox"/>	
1	3	5 Staff support youth in using tools of the field (e.g. ,youth use calculators for mathematics; ph-tests for biology; woodworking tools for building; clay models for design, auto-cad computer design programs).	<input type="checkbox"/>	
1	3	5 Staff highlight value of precision and accuracy in measuring , observing , recording or calculating (e.g. measurement error can impact an experiment or conclusion; a mis-typed letter can bring you to the wrong website, measure twice, cut once, scientists always need to double-check their calculations before drawing conclusions, you must observe carefully to see the difference between species of sparrows).	<input type="checkbox"/>	

REPRESENTATION | Staff support skills for representing STEM ideas, actions and objects.

Practice does NOT occur	Practice occurs, but NOT ALL youth/teams engaged	Staff enacts practice AND all youth /teams engaged	<input type="checkbox"/>	SUPPORTING EVIDENCE/ANECDOTES
1	3	5 Staff model use of STEM vocabulary terms (e.g., SCIENCE - chlorophyll, density, atomic, nuclear, geologic, light year, H ₂ O; COMPUTERS - hard drive, random access memory (RAM), gigabytes; ENGINEERING -,torque, currents force; MATH - spreadsheet; graph, variable, rate of change, slope, percent).	<input type="checkbox"/>	
1	3	5 Staff support and encourage youth in use of STEM vocabulary (e.g. expand upon youth comments with correct terminology; explain meaning of STEM vocabulary in ways youth can understand, ask “do you know the correct term for that?; “ that ‘tall bird’ is a Great Blue Heron”; “saline means it has salt in it.”).	<input type="checkbox"/>	
1	3	5 Staff support youth in using classification or abstraction , linking concrete examples to principles, laws, categories, or formulas (e.g. “Mice, porcupines, and squirrels are all rodents, rodents are all mammals.” “The pool ball moved because ‘for every action, there is an equal and opposite reaction’.”).	<input type="checkbox"/>	
1	3	5 Staff support youth in conveying STEM concepts through symbols, models , or other nonverbal language (e.g., youth use diagrams, equations, flowcharts, idea webs, outlines, photographs, mock-ups, draft drawings, use of design software to create blueprints, displays, dioramas, physical models, prototypes, graphs, charts, tables, equations, etc.).	<input type="checkbox"/>	

FORM A INTERVIEW ITEMS FOR OFFERING SESSION LEADER

(administered directly following observation)

STAFF INTERVIEW: PROGRAM PREPARATION | PROJECT-BASED | STAFF QUALIFICATIONS

PROGRAM PREPARATION | Staff and program have prepared to maximize STEM learning.

Items			<i>Supporting Evidence/Anecdotes</i>
<p>1 Staff create lesson plans for almost no STEM activities over the course of the program.</p>	<p>3 Staff create (or will create) lesson plans for some STEM activities over the course of the program.</p>	<p>5 Staff create (or will create) lesson plans for almost all STEM activities over the course of the program.</p>	<p><input type="checkbox"/> Do you or will you create lesson plans for the STEM activities you facilitate over the course of the program? (If the answer is “yes”, ask “for what proportion of the activities that you facilitate do you make lesson plans?”).</p>
<p>1 Staff have not identified instructional goals for STEM activities.</p>	<p>3 Staff have identified instructional goals for some STEM activities.</p>	<p>5 Staff have identified instructional goals for all STEM activities.</p>	<p><input type="checkbox"/> Do you have specified instructional goals for the STEM activities that you facilitate over the course of the program? (If the answer is “yes”, ask “for what proportion of the STEM activities that you facilitate do you have specified instructional goals?”).</p>
<p>1 Staff have not linked planned STEM activities to the content of the school day program.</p>	<p>3 Staff have linked some planned STEM activities to the content of the school day.</p>	<p>5 Staff have linked all planned STEM activities to the content of the school day.</p>	<p><input type="checkbox"/> Have you linked any the STEM activities to the content of the school day? (If the answer is “yes”, ask “what proportion of the STEM activities that you facilitate have you been able to link to the school day?”). [if not applicable, do not score—e.g., for summer programs or programs serving youth from unrelated schools]</p>

PROGRAM PREPARATION (continued) | Staff and program have prepared to maximize STEM learning.

Items

- | | | |
|--|---|--|
| <p>1 Staff have no knowledge of youth academic achievement or challenges.</p> | <p>3 Staff have knowledge of some of the youth’s academic achievement or challenges.</p> | <p>5 Staff have knowledge of all or most of the youth’s academic achievement or challenges.</p> |
|--|---|--|

Supporting Evidence/Anecdotes

- | | |
|--------------------------|---|
| <input type="checkbox"/> | <p>Do you know what the academic challenges or achievements are for the youth in this program? (If the answer is “yes”, ask “for what proportion of the youth in this program are you aware of their academic achievements and challenges?”).
 [If not applicable, do not score—e.g. for summer programs, for programs serving youth from unrelated schools]</p> |
|--------------------------|---|

- | | | |
|---|--|--|
| <p>1 Safety policies and procedures related to STEM activities have not been established (e.g. internet safety rules, age and supervision guidelines for lab equipment).</p> | <p>3 Safety policies and procedures related to STEM activities have been established, but are not consistently followed (e.g. internet safety rules, age and supervision guidelines for lab equipment).</p> | <p>5 Safety policies and procedures related to STEM activities are established and consistently followed by staff (e.g. internet safety rules, age and supervision guidelines for lab equipment).</p> |
|---|--|--|

- | | |
|--------------------------|--|
| <input type="checkbox"/> | <p>Do you have safety policies and procedures for the STEM activities in this program? Are they consistently followed?</p> |
|--------------------------|--|

- | | | |
|---|--|--|
| <p>1 The program does not expose youth to people or places using STEM (field trips, guest speakers).</p> | <p>3 The program exposes youth to people or places using STEM (field trips, guest speakers) once during a program session, or expose only youth through non-interactive media, such as magazines or videos.</p> | <p>5 Staff expose youth to people or places using STEM (field trips, guest speakers) more than once during a program session.</p> |
|---|--|--|

- | | |
|--------------------------|--|
| <input type="checkbox"/> | <p>Does this program include field trips, guest speakers or other ways of exposing youth to people and places related to STEM careers and activities? Please briefly describe.</p> |
|--------------------------|--|

PROJECT-BASED | Activities provide continuity across sessions.

Items

1 None of the STEM activities are part of a multi-session series, or part of a multisession project.

3 At least one STEM activity is part of a series of related activities that span multiple sessions (e.g., one day is evaporation, next day condensation, all tied to the water cycle.).

5 At least one STEM activity is part of a multi-session project (e.g., river cleanup, building a roller coaster using robots, a garden project, etc.).

Supporting Evidence/Anecdotes

Are any of your program activities, part of a multi-session project, in other words, a project that takes more than one session to complete?

1 No youth participate in a multi-session STEM project.

3 Some youth participate in a multi-session STEM project.

5 All youth participate in a multi-session STEM project.

If a multi-session project was not an activity on the day of the observation, ask if all or some of the youth participate in a multi-session project.

STAFF QUALIFICATIONS

SURVEY ITEMS FOR OBSERVED AFTERSCHOOL STAFF

Demographic Information

RESPONSES

1. How many years of experience do you have working in this program?

2. How many years of experience do you have in your position (e.g., site supervisor, front line youth worker, etc.), whether at this program or in other programs?

3. Are you also a school-day teacher?

4. What is your highest level of education completed?

Yes

No

High School/ GED

Bachelors Degree

Some college

Masters Degree

Associates Degree

Doctoral Degree

Professional School

5. If your degree is in a particular field, please specify which field.

6. In what academic content area(s) do you have expertise?

7. What was the academic content of the offering you were observed leading today?

8. Were you comfortable with your knowledge level of the academic content of the offering you led today?

Yes

No

STEM PQA OBSERVATION GUIDE

Summary of Scales

I. Safe Environment

- Emotional Safety
- Healthy Environment
- Emergency Preparedness
- Accommodating Environment
- Nourishment

II. Supportive Environment

- Warm Welcome
- Session Flow
- Active Engagement
- Skill-Building
- Encouragement

III. Interaction

- Belonging
- Collaboration
- Leadership
- Adult Partners

IV. Engagement

- Planning
- Choice
- Reflection
- Connections

STEM Skill-Building

- Scientific Reasoning
- Observation and Measurement
- Representation

Staff Interview

- Program Preparation
- Project-Based
- Staff Qualifications

Follow-up Questions:

- Where are the emergency procedures posted?
- Is there an accessible fire extinguisher?
- Is there an accessible first-aid kit?
- Do you have any special safety or emergency equipment?
- Are entrances to the indoor program space supervised?
- Is access to the outdoor program space supervised?
- Can the furniture be moved around?
- In the course of the program offering, do youth make presentations?

Scheduled starting time: _____ Actual starting time: _____

Scheduled end time: _____ Actual end time: _____

END USER LICENSE AGREEMENT: Program Quality Assessment

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- D. PQA. A family of observational assessment tools designed to assess the instructional quality of programs and to identify staff training needs.
 - a. Youth PQA. A validated observational assessment for programs that serve youth in grades 4 - 12.
 - b. School-Age PQA. A PQA designed for programs that serve children in grades K - 6.
 - c. Health & Wellness PQA. A PQA designed for health and wellness-related programming.
 - d. STEM PQA. A PQA designed Science, Technology, Engineering and Math (STEM)-related programs.
 - e. ARTS PQA. A PQA designed for Arts enrichment-related programs.
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- B. In the event that either Party breaches this Agreement, the other Party shall, in addition to any other remedy it may have, have the right to terminate this Agreement, upon ten (10) days written notice.

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9. INDEMNIFICATION.

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This Agreement shall be binding and inure to the benefit of the Parties hereto. Your rights are personal in nature and You shall not assign any of Your rights nor delegate any of Your obligations under this Agreement to any third Party without Licensor's express written consent.

11. YOUR REPRESENTATIONS.

You have done your own investigation, due diligence and evaluations regarding the PQA and have made your own independent determination of its value. No promises or representations have been made by Licensor or any of Licensor's representatives or agents other than herein set forth. No modifications of the term hereof shall be valid unless made in writing and executed by both You and Licensor.

12. MISCELLANEOUS.

- A. Independent Contractors. The Parties are independent contractors and nothing contained in this Agreement shall be construed to create relationship of partners, joint ventures, employer-employee or franchise-franchisee. You acknowledge that You do not have, and shall not make any representations to any third party, either directly or indirectly, that You have any authority to act in the name of or on behalf of Us or to obligate Us in any way whatsoever except as expressly provided herein. You agree not to represent that You are an agent or representative of Ours and You further agree not to use the word "agent," or any other designation, which might imply that Licensor is responsible for Your acts.
- B. Governing Law and Jurisdiction. The rights of the Parties and provisions of this Agreement shall be interpreted and governed in accordance with the laws of the District of Columbia and you agree that proper jurisdiction and venue shall be in the general courts of the District of Columbia.
- C. Waiver. The failure of either Party to enforce, at any time or for any period of time, any provision of this Agreement shall not be a waiver of such provision or of the right of such Party thereafter to enforce such provision.
- D. Amendment. This Agreement may be amended only by written instrument signed by representatives of both Parties.
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