Indiana Afterschool Specialty Standards

2012-2013

indianaafterschool.org

A Guide for High Quality Programs Serving Youth in Out-of-School Time

Science, Technology, Engineering and Math (STEM)

INDIANA AFTERSCHOOL STANDARDS
PLEDGE to QUALITY

Indiana Afterschool Network
Supporting Indiana's Afterschool and Summer Programs

Purpose of Indiana Afterschool Standards

The purpose of the Indiana Afterschool Standards is to outline the path and steps that lead to high quality youth programs that take place outside school day hours. The afterschool standards are based on national research and best practices in the youth development and education fields.

About the Science, Technology, Engineering and Math (STEM) Specialty Standards

This special STEM addition to the Indiana Afterschool Standards outlines best practices and recommendations specific to STEM programming for K-12 youth in out-of-school time programs. In order to develop these specialty standards, the Indiana Afterschool Network convened a taskforce of STEM experts in education, business, and youth development. The taskforce researched standards and best practices throughout the nation and compiled these standards from many sources (see Sources section). Indiana is on the leading edge in developing STEM standards for out-of-school time programs.

Defining STEM Education

- **STEM Education:** The Indiana Department of Education defines STEM Education as "an intentional, multi-disciplinary approach to teaching and learning, in which students uncover and acquire a cohesive set of concepts, competencies, and dispositions of science, technology, engineering, and mathematics that they transfer and apply in both academic and real world contexts in order to be globally competitive in the 21st Century."

- **Informal STEM Education** inspires student learning through hands-on, experience-based activities that enrich and add value to their school experiences. Informal STEM takes place beyond school day hours, in schools, community organizations, and cultural institutions such as libraries and museums.

Youth outcomes for informal STEM programs include:

- Increased interest and excitement in STEM learning
- Increased STEM skills, understanding, knowledge and competence
- Increased awareness and interest in STEM education and career pathways

Indiana Quality Program Self-Assessment (IN-QPSA)?

The IN-QPSA is an online self-assessment tool that enables youth programs to rate their performance based on the Indiana Afterschool Standards.

The tool allows you to:

- Choose which standards you want to assess.
- Rate how well your program meets each standard.
- Start the assessment and complete over time.
- Use online or print stakeholder surveys.
- Generate automated reports for organization and/or program site(s).
- Generate an automated action plan.
- Track your program results over time and compare progress.

The Rating Scale

The Indiana Quality Program Self-Assessment Tool uses the following rating scale to help you and your team assess the degree to which each quality indicator is evident in the program. The definitions outlined below are to help guide the reviewers' understanding of the numeric ratings.

4 = Excellent/Exceeds Standard

This rating indicates that the program is a true leader in the practice as described. Exceeds Standard means that the program is exceptional or outstanding in this area. The practice is demonstrated in clearly observable ways. The rater can easily generate multiple examples of how and when the program executes this practice. Your program expertise in this area positions you to help and work with others to improve in this area. This is an area your program has fully mastered and executes at the highest level.
You say: "We are a leader in this area."

3 = Good/Meets Standards

This rating indicates that the program demonstrates the practice described in observable ways. Meets Standard means that the program fully executes the practice described. The rater can easily generate examples of how and when the program executes this practice. This is an area your program executes well.
You say: "We demonstrate this in observable ways."

2 = Some Progress Made/Approaching Standard

This rating indicates that the program has made some progress toward the practice described. The practice may not be fully observable yet. Approaching Standard means that the program is working toward executing the practice, but could use more targeted assistance to reach it. The rater may be able to generate examples of how the program has taken steps (such as planning or policy development) to meet the standard, but the full standard has not yet been clearly demonstrated in observable ways. This is an area your program does not yet execute or does not execute well. There is a need for additional support in order to meet the standard.
You say: "We could use some support here."

1 = Must Address and Improve/Standard Not Met

This rating indicates that the program has not yet addressed this area. The practice is not observable. Standard Not Met means that the program may not have started working toward this practice yet, and requires significant support in this area in order to move forward. The rater cannot generate examples of how the program is working to meet this standard. Your program has not demonstrated or taken steps to demonstrate the practice described. This is an area your program does not execute. There is a need for significant support to get on track to address this standard.
You say: "We need significant support in this."

0 = Don't Know/Not Applicable

This rating indicates that the program is not familiar enough with this aspect of the program to rate performance on this indicator or is just not sure how to rate it at this time. This rating could also mean that the standard and/or indicator simply does not apply to your site or program.
You say: "We're not sure." or "This doesn't pertain to our program."

Rating	4	3	2	1	0
Scale Description	Exceeds Standards	Meets Standard	Approaching Standard	Standard Not Met	Don't Know/ Not Applicable
Program might say:	*"We are a leader in this."*	*"We demonstrate this in observable ways."*	*"We could use some support here."*	*"We need significant support in this."*	*"We're not sure." or "This doesn't pertain to our program."*
Program Culture and Environment					
1. The program creates an inspiring STEM learning environment for all youth.					
1A. The STEM program encourages youth to discover, explore, experiment and take learning risks.					
1B. The STEM activity space feels different than school (e.g., youth can sit at work stations or on carpet pieces).					
1C. The space encourages interest in STEM (e.g., scientific tools, visible posters or other visual displays).					
1D. The space is arranged to maximize STEM learning and exploration (e.g., youth have room to do group work, staff assemble together for discussion and group work).					
2. STEM resources, equipment and supplies support STEM learning.					
2A. Staff and youth have access to resources, equipment and supplies that support STEM learning.					
2B. There is an adequate amount of STEM materials for all youth to participate.					
2C. STEM materials are age- and developmentally-appropriate (e.g., larger lined notebook paper for younger youth rather than college rule paper, handouts use appropriate language).					
2D. STEM materials are well maintained and safe to use.					
2E. Staff and youth use STEM materials safely and appropriately.					

Rating	4	3	2	1	0
Scale Description	Exceeds Standards	Meets Standard	Approaching Standard	Standard Not Met	Don't Know/ Not Applicable
Program might say:	*"We are a leader in this."*	*"We demonstrate this in observable ways."*	*"We could use some support here."*	*"We need significant support in this."*	*"We're not sure." or "This doesn't pertain to our program."*
Program Culture and Environment, cont.					
3. The STEM program engages families, schools and community.					
3A. The program collaborates with schools to share STEM resources and expertise.					
3B. The program partners and connects with STEM-rich institutions (e.g., museums, libraries, science centers, and STEM education organizations).					
3C. The program engages families in a variety of ways (e.g., family science nights, sending home materials that support STEM at home, etc.).					
Staff Development and Expectations					
4. Staff receive professional development that increases their confidence and ability to facilitate quality STEM learning.					
4A. STEM is integrated into existing trainings and broader program goals.					
4B. Staff development focuses on youth development and STEM learning.					
4C. Staff are exposed to interesting, easy to implement STEM content and curricula.					
4D. Staff learn real-world applications of STEM.					
4E. Staff learn to use the inquiry process and other methods for teaching informal STEM.					
4F. Staff are resource gathers, knowing where to find expertise and how to use it.					
4G. Staff learn from STEM experts in the community.					

Rating	4	3	2	1	0
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Staff Development and Expectations, cont.					
4H. Staff are partnership builders, actively engaging STEM experts and organizations to support STEM programming.					
4I. Staff are encouraged to learn alongside youth and facilitate ways to find answers.					
Program Focus					
5. Activities inspire and engage youth in STEM learning.					
5A. Activities are fun, hands-on, active, and experiential.					
5B. Activities are collaborative and use a team-based approach.					
5C. Youth identify topics and questions of interest to explore.					
5D. Activities connect to the interests, experiences, and cultures of youth participants.					
5E. Youth learn how STEM connects to their daily lives and the world in which they live.					
5F. Youth have opportunities to experience STEM learning through projects.					
5G. Youth have opportunities to practice new skills, present and showcase their work to guests.					
6. The program provides opportunities for youth to learn STEM content, skills and knowledge.					
6A. The program has a STEM curriculum that supports youth learning.					

Rating	4	3	2	1	0
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Program Focus, cont.					
6B. Common core standards inform STEM planning.					
6C. Program curricula and activities complement school day learning.					
6D. Activities develop higher-order thinking skills (e.g., inquiry, decision-making, planning, problem solving and reflecting).					
6E. Youth have opportunities to apply scientific reasoning (e.g., manipulating, testing, investigating, predicting, questioning, observing).					
6F. STEM activities include a variety of subject areas (e.g., reading, writing and art).					
6G. Youth have opportunities to learn about and explore STEM careers.					
Data Collection and Impact					
7. The program utilizes a variety of data to measure the impact of its STEM programming.					
7A. The program has a written plan with established goals.					
7B. The program collects data from staff, students, parents and community partners to demonstrate STEM learning.					
7C. Programming is adjusted based on data findings.					
7D. The program shares the progress and outcomes with key stakeholders.					
7E. The program maintains confidentiality of all student data and adheres to all federal, state and local privacy laws.					

Partners

The following organizations are part of the Indiana Afterschool STEM Taskforce and contributed to the development of the Indiana Afterschool STEM Standards:

- 4-H Youth Development, Purdue University
- EcO15 (Economic Opportunities 2015)
- Indiana Afterschool Network
- Indiana Association of School Principals
- Indiana Department of Education
- Indiana Space Grant Consortium, Purdue University
- Indiana University Center for Evaluation and Education Policy
- Indiana University-Purdue University at Columbus (IUPUC)
- Indiana University-Purdue University at Indianapolis (IUPUI)
- Indiana FIRST Robotics
- I-STEM Network
- Marian University
- Precise Path Robotics
- Purdue University School of Engineering
- Safe Harbor Afterschool Program, Michigan City
- University of Indianapolis, CELL
- WisdomTools, Inc.

Sources

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Jason Freeman, Rena Dorph, Ph.D.m and Bernadette Chi, Ph.D. Strengthening After-School STEM Staff Development, http://afterschoolscience.org/pdf/coalition_publications/Strengthening%20After-School%20STEM%20Staff%20Development.pdf (January 2009).

For more information about the Indiana Afterschool Standards and STEM resources, go to www.indianaafterschool.org.

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