New York State 4-H STEM Checklist

A “STEM Ready” 4-H experience is a program that is framed in STEM concepts, based on STEM standards and intentionally targets the development of STEM abilities and the outcome articulated by the 4-H STEM Logic Model. Additionally, it integrates the Essential Elements and engages participants in experiential and inquiry based learning. In addition to the following criteria below, it’s also recommended that STEM programs offer a sustained learning experience which offers youth the opportunity to be engaged in programs with relevant frequency and duration. Utilize the following checklist to self assess the program you deliver.

To meet the needs of children, youth, and the nation with high-quality science, technology, engineering and math programs...

<table>
<thead>
<tr>
<th>Youth Development Context</th>
<th>Youth Development Context, Science Content and Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are you providing opportunities for youth to experience and improve in the Essential Elements of Positive Youth Development?</td>
<td>Are learning experiences led by trained, caring adult staff and volunteers acting as mentors, coaches, facilitators and co-learners who operate from a perspective that youth are partners and resources in their own development?</td>
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<tr>
<td>Do youth get a chance at mastery – addressing and overcoming life challenges in your programs?</td>
<td>Are activities led with an experiential approach to learning that use inquiry to foster the natural creativity and curiosity of youth?</td>
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<tr>
<td>Do youth cultivate independence and have an opportunity to see oneself as an active participant in the future?</td>
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<tr>
<td>Do youth develop a sense of belonging within a positive group?</td>
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<td>Do youth learn to share a spirit of generosity toward others?</td>
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<td>Does your program target one or more of the outcomes on the 4-H STEM Logic Model and have you considered the frequency and duration necessary for youth to accomplish those outcomes?</td>
<td></td>
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</table>
### Science Content and Process

**Are you providing science, technology, engineering and math programs based on National Science Education Standards?**

Science education standards are criteria to judge quality – the quality of what young people know and are able to do, the quality of the science programs that provide the opportunity for children and youth to learn science, the programs, the quality of assessment practices and policies.

[http://www.nap.edu/readingroom/books/nse](http://www.nap.edu/readingroom/books/nse)

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**Are you providing children and youth opportunities to improve their STEM abilities?**

- Predict
- Hypothesize
- Evaluate
- State a problem
- Research problem
- Test
- Problem solve
- Design solutions
- Measure
- Collect data
- Draw/Design
- Build/Construct
- Use tools
- Observe
- Communicate
- Organize
- Infer
- Question
- Plan investigation
- Summarize/Relate
- Invent/Implement solutions
- Interpret/Analyze/Reason
- Categorize/Order/Classify
- Model/Graph/Use numbers
- Troubleshoot
- Redesign
- Optimize
- Collaborate
- Compare