

**Kentucky 4-H: Thriving in Science Engineering Technology (SET)**

Positive youth development in 4-H doesn't just happen, the 4-H Thriving Model is used to predict the way that 4-H has its positive impact on youth development. This worksheet focuses on the developmental context and youth thriving portions of the 4-H Thriving Model. This resource is intended for agents and volunteers to use when intentionally designing programs to promote high quality positive youth development experiences in Science Engineering Technology (SET).



Developmental Context Foundation of 4-H Programming			
Context	Suggested Actions to Implement	Examples	County Program Opportunities
<p><b>How will you foster sparks?</b>  <i>A spark is a passion for a self-identified interest or skill, or a capacity that metaphorically lights a fire in a young person's life, providing energy, joy, purpose, and direction.</i></p>	<ul style="list-style-type: none"> <li>Engage youth in discovery, exploration, and understanding in science, engineering, and technology.</li> <li>Provide opportunities for youth to learn new skills in 4-H science, engineering, and technology programs.</li> <li>Youth will discover, explore, and understand self-identified interests in Science, Engineering, and Technology.</li> </ul>	<ul style="list-style-type: none"> <li>Host National Youth Science Day (NYSD) experiments during National 4-H Week every October.</li> <li>4-H SET Clubs (in school and afterschool).</li> <li>SET Related Day Camps and/or classes during 4-H Camp.</li> </ul>	



Developmental Context Foundation of 4-H Programming			
Context	Suggested Actions to Implement	Examples	County Program Opportunities
<p><b>How will you promote belonging?</b> <i>Feeling of inclusion regardless of gender, ethnicity, sexual orientation, or ability. Youth should have opportunities to share their culture and heritage with others and to forge a positive identity.</i></p>	<ul style="list-style-type: none"> <li>Have youth demonstrate and share new abilities in science, engineering, and technology with others.</li> <li>Provide opportunities for youth to learn and share aspects of science, engineering, and technology history and how their culture and others implement aspects of SET into daily lives.</li> </ul>	<ul style="list-style-type: none"> <li>Teamwork challenges throughout the project to encourage bonding between the youth and leaders.</li> <li>4-H SET related Clubs and/or Teams set the ground rules for their behavior.</li> <li>Club Swag (t-shirts, stickers, lanyards, etc.).</li> <li>Youth vote on a SET related name for their 4-H Club/Team.</li> </ul>	
<p><b>How will you support developmental relationships?</b> <i>DRs begin by creating a secure attachment between the 4-H member and the adult, reflected in mutual warmth, respect and trust.</i></p>	<ul style="list-style-type: none"> <li>Provide youth opportunities to construct, implement, experiment, and use critical thinking skills in completion of SET Challenges.</li> <li>Conduct non-formal education learning activities for youth and volunteers in afterschool, enrichment, 4-H Clubs, and day and summer camp workshops.</li> </ul>	<ul style="list-style-type: none"> <li>Youth connect with adult mentors such as...</li> <li>KY 4-H SET Project Club Leaders.</li> <li>Local high school and/or college level science teachers.</li> <li>Local SET related hobby club members and/or small plane pilots.</li> <li>Provide opportunities for youth to share feedback in safe environment.</li> </ul>	





Developmental Context			
Foundation of 4-H Programming			
Context	Suggested Actions to Implement	Examples	County Program Opportunities
<p><b>How will you encourage engagement or youth voice within programming?</b>  <i>Ability to contribute in a meaningful way on subjects of importance to them.</i></p>	<ul style="list-style-type: none"> <li>• Provide opportunities for teens to serve as mentors to younger members of the project.</li> <li>• Provide SET lessons where youth apply the skills gained from 4-H science, engineering, and technology.</li> <li>• Provide youth with opportunities to give input into ways to demonstrate SET projects.</li> <li>• Encourage opportunities for youth to demonstrate what they have learned.</li> </ul>	<ul style="list-style-type: none"> <li>• Conduct officer elections or team captain selections as appropriate.</li> <li>• Allow youth to demonstrate projects for other groups/clubs.</li> <li>• Encourage participation in speech and/or demonstration contest.</li> </ul>	

Youth Thriving			
Facilitating the Process of Growth Through the Seven Indicators			
Indicator	Suggested Actions to Implement	Examples	County Program Opportunities
<p><b>Growth Mindset</b>  <i>A growth mindset supports effort in learning over innate ability.</i></p>	<ul style="list-style-type: none"> <li>• Facilitate opportunities for youth to build critical thinking skills related to SET.</li> <li>• Encourage youth to learn new skills in 4-H science, engineering, and technology programs.</li> </ul>	<ul style="list-style-type: none"> <li>• Provide SET project opportunities outside of school settings.</li> <li>• Have youth complete a SET Project.</li> <li>• Use encouraging language- "You haven't got there, yet, but you will!"</li> </ul>	





Youth Thriving			
Facilitating the Process of Growth Through the Seven Indicators			
Indicator	Suggested Actions to Implement	Examples	County Program Opportunities
<p><b>Openness to Challenge &amp; Discovery</b> <i>Thriving youth have the desire and ability to try new things and challenges.</i></p>	<ul style="list-style-type: none"> <li>Encourage youth to make improvements in their design and execution of SET projects through the engineering design process.</li> <li>Provide youth the opportunities to attend 4-H project workshops/online training webinars to further knowledge and skills related to their SET project(s).</li> </ul>	<ul style="list-style-type: none"> <li>Youth create a display or object related to SET and can explain what they have learned.</li> <li>Youth participate in the 4-H demonstration contest.</li> </ul>	
<p><b>Hopeful Purpose</b> <i>Thriving youth have a sense of hope and purpose and see themselves on the way to a happy and successful future.</i></p>	<ul style="list-style-type: none"> <li>Encourage youth to enter projects in SET contests on local, area, state, regional, and/or national level.</li> <li>Introduce youth to careers in science, engineering, and technology.</li> </ul>	<ul style="list-style-type: none"> <li>Science, Engineering, and Technology Leadership Board.</li> <li>Provide an opportunity to interact with/ask questions to adults in SET careers.</li> </ul>	
<p><b>Prosocial Orientation</b> <i>Thriving youth see helping others as a personal responsibility, and live up to the values of respect, responsibility, honesty, kindness, and generosity. Thriving youth care about and give back to their communities.</i></p>	<ul style="list-style-type: none"> <li>Work with local SET 4-H Club to develop partnerships with community organizations.</li> <li>Provide opportunities for teens to mentor younger 4-Hers in science, engineering, and technology programs.</li> </ul>	<ul style="list-style-type: none"> <li>Older youth lead a 4-H Cloverbud SET workshop.</li> <li>Youth will provide demonstrations of skills learned through science fairs, 4-H communications contests, and/or other avenues.</li> </ul>	





**Youth Thriving**

*Facilitating the Process of Growth Through the Seven Indicators*

Indicator	Suggested Actions to Implement	Examples	County Program Opportunities
<p><b>Transcendent Awareness</b> <i>Thriving youth are aware of a reality bigger than themselves from which meaning and purpose are derived. This transcendent awareness shapes everyday thoughts and actions.</i></p>	<ul style="list-style-type: none"> <li>• Reflect on failures and successes with youth.</li> <li>• Provide youth opportunities to “think outside of the box” and implement the engineering design process to complete challenges that may impact their counties, state, world.</li> <li>• Begin each meeting with the 4-H Pledge.</li> </ul>	<ul style="list-style-type: none"> <li>• Youth will utilize the scientific method to solve problems in their daily life.</li> <li>• Have youth teach a SET lesson to younger 4-H Youth.</li> <li>• Provide an opportunity for youth to teach at a day camp or during summer camp.</li> </ul>	
<p><b>Positive Emotions</b> <i>Thriving youth are positive and optimistic and can manage emotions in a way that leads to health and well-being.</i></p>	<ul style="list-style-type: none"> <li>• Provide youth opportunities to achieve various stages of successes and failures in a safe environment.</li> <li>• Within their clubs/teams, youth will hold each other accountable for group rules.</li> </ul>	<ul style="list-style-type: none"> <li>• Allow time to debrief after activities.</li> <li>• Encourage use of “I” statements to express their feelings about goals.</li> </ul>	
<p><b>Goal Setting &amp; Management</b> <i>Thriving youth set goals and persevere in achieving their goals. They also make self-regulatory decisions that lead to better short-term and long-term success.</i></p>	<ul style="list-style-type: none"> <li>• Encourage youth to apply to State Leadership Boards, enhancing their progressive experience.</li> <li>• Provide youth opportunities to enter their work into competitions.</li> <li>• Encourage youth the opportunities to determine what SET projects they enjoy.</li> </ul>	<ul style="list-style-type: none"> <li>• Younger youth will strive to be teen mentors on a county/area level.</li> <li>• Youth will apply for the Kentucky 4-H Science Engineering Technology Leadership Board.</li> <li>• Encourage leadership development in their 4-H Clubs, camp, and other opportunities.</li> </ul>	





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#### Resources:

4-H Thriving Model of PYD: Informed by Science – Grounded in Practice (2021). Retrieved: <https://helping-youth-thrive.extension.org/tip-sheets/>

Earle, T. (n.d.). *4-H Youth Development State Initiatives and Trends 2016-2020 Core Curriculum: Science, Engineering & Technology*. Kentucky 4-H - University of Kentucky. Retrieved October 23, 2022, from [http://4-h.ca.uky.edu/sites/4-h.ca.uky.edu/files/set\\_trendrevised.pdf](http://4-h.ca.uky.edu/sites/4-h.ca.uky.edu/files/set_trendrevised.pdf)

Earle, T. (n.d.). *Division 6021 - 4-H Electric*. Kentucky 4-H - University of Kentucky. Retrieved October 23, 2022, from [https://4-h.ca.uky.edu/files/6021\\_electricity\\_clean\\_3.pdf](https://4-h.ca.uky.edu/files/6021_electricity_clean_3.pdf)

Earle, T. (n.d.). *Division 6022 - 4-H Tractor Operators Contest*. Kentucky 4-H - University of Kentucky. Retrieved October 23, 2022, from [https://4-h.ca.uky.edu/files/6022\\_petroleum\\_power\\_clean\\_0.pdf](https://4-h.ca.uky.edu/files/6022_petroleum_power_clean_0.pdf)

Earle, T. (n.d.). *Division 6023 - 4-H Lawn Mower Operators Contest*. Kentucky 4-H - University of Kentucky. Retrieved October 23, 2022, from [https://4-h.ca.uky.edu/files/6023\\_lawn\\_mower\\_clean.pdf](https://4-h.ca.uky.edu/files/6023_lawn_mower_clean.pdf)

Earle, T. (n.d.). *Logic Model 4-H SET*. Kentucky 4-H - University of Kentucky. Retrieved October 23, 2022, from [http://4-h.ca.uky.edu/sites/4-h.ca.uky.edu/files/set\\_logic\\_model.pdf](http://4-h.ca.uky.edu/sites/4-h.ca.uky.edu/files/set_logic_model.pdf)

Earle, T., & Stamper, C. (n.d.). *Science, Engineering & Technology*. Kentucky 4-H - University of Kentucky. Retrieved October 23, 2022, from <https://4-h.ca.uky.edu/set>

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