

\* Project skill level indicates the project's intended audience. B = Beginning level—for members with little or no experience in a project area, or 8 to 10 year olds; I = Intermediate level, for members with some experience in a project area, or 11 to 13 year olds; A = Advanced level—for experienced members in a project area, or 14 or older; and X = All levels—for all skill and age levels. Exceptions to these age guidelines are noted. # - Not Eligible for State Fair Competition

Project Number and Name	Skill Level*	Project Completion Requirements See each project book for complete details.	County Requirements	Fair Display Requirement
-------------------------	--------------	--	---------------------	--------------------------

## Science, Technology, Engineering, and Math (STEM)

### Aerospace Science

Rockets and planes brought to judging are not required to be launched. Simple snap together plastic models kits are discouraged. All plans and rockets should require assembly, gluing, sanding, and painting, (unless bottle rockets are used for Rocket Away)

<p>501 <b>Rockets Away</b> (2-Liter Bottle Rockets) Rockets and planes brought to judging are not required to be launched. Simple snap together plastic model kits are discouraged. All planes and rockets should require assembly, gluing, sanding, and painting, (unless bottle rockets are used for Rockets Away).</p>	<p>B, ages 10-17</p>	<p>All 3 interest areas At least 2 organized project activities At least 2 leadership/citizenship activities Build and launch a 2-liter bottle rocket Project review</p>	<p>Bring completed project book and a rocket that you have built. Do not include the motor or fuel. Be prepared to discuss construction of the model, recorded launch trails and what you learned from the project.</p>	<p>Display rocket in Club Booth that tells about your project experience.</p>
<p>502 <b>Science Fun with Flight</b>  Rockets and planes brought to judging are not required to be launched. Simple snap together plastic model kits are discouraged. All planes and rockets should require assembly, gluing, sanding, and painting, (unless bottle rockets are used for Rockets Away).</p>	<p>B, ages 9-14</p>	<p>All 7 interest areas At least 2 learning experiences At least 2 leadership/citizenship activities Build a glider or flyer, or a plastic model airplane or jet Project review</p>	<p>Bring completed project book and the airplane you have built or educational display or educational poster that tells about your project experience. Be prepared to discuss construction of your airplane and the information you have learned.</p>	<p>Display airplane or educational display or educational poster that tells about your project experience in your 4-H Club Booth or in the countywide booth.</p>

\* Project skill level indicates the project's intended audience. B = Beginning level—for members with little or no experience in a project area, or 8 to 10 year olds; I = Intermediate level, for members with some experience in a project area, or 11 to 13 year olds; A = Advanced level—for experienced members in a project area, or 14 or older; and X = All levels—for all skill and age levels. Exceptions to these age guidelines are noted. # - Not Eligible for State Fair Competition

Project Number and Name	Skill Level*	Project Completion Requirements See each project book for complete details.	County Requirements	Fair Display Requirement
503 <b>Rockets Away</b> (Solid-Fuel Model Rockets) Rockets and planes brought to judging are not required to be launched. Simple snap together plastic model kits are discouraged. All planes and rockets should require assembly, gluing, sanding, and painting, (unless bottle rockets are used for Rockets Away).	B	All 3 interest areas At least 2 organized project activities At least 2 leadership/citizenship activities Build and launch a solid-fuel model rocket from a kit Project review	Bring completed project book and a rocket that you have built. Do not include the motor or fuel. Be prepared to discuss construction of the model, recorded launch trails and what you learned from the project.	Display rocket in Club Booth or a poster or educational display that tells about your project experience.
503M <b>Solid-Fuel Rocketry Master</b> Rockets and planes brought to judging are not required to be launched. Simple snap together plastic model kits are discouraged. All planes and rockets should require assembly, gluing, sanding, and painting, (unless bottle rockets are used for Rockets Away).	A	One major solid-fuel rocketry project At least 2 learning experiences At least 2 citizenship activities Project records including interview, budget, and photos Judging activity	Bring completed project book and a rocket that you have built. Do not include the motor or fuel. Be prepared to discuss construction of the model, recorded launch trails and what you learned from the project.	Display rocket in Club Booth or a poster or educational display that tells about your project experience.
550 – <b>Young Engineers in Solar Energy</b>	I	All 9 activities (including a capstone project) and all of the Talking It Over questions At least 2 learning experiences At least 2 leadership/citizenship activities Project review	To be mailed when state fair project requirement is available.	To be mailed when state fair project requirement is available.
<b>Chemistry</b>				
493 <b>Science Fun with Kitchen Chemistry</b>	B	All 11 experiments At least 2 learning experiences At least 2 leadership/citizenship activities Project review	Be prepared to discuss the experiments completed. Bring poster or educational exhibit teaching about an activity from project.	Exhibit poster or non-edible educational exhibit teaching about an activity from project. Display in your 4-H Club Booth or county wide booth.

\* Project skill level indicates the project's intended audience. B = Beginning level—for members with little or no experience in a project area, or 8 to 10 year olds; I = Intermediate level, for members with some experience in a project area, or 11 to 13 year olds; A = Advanced level—for experienced members in a project area, or 14 or older; and X = All levels—for all skill and age levels. Exceptions to these age guidelines are noted. # - Not Eligible for State Fair Competition

Project Number and Name	Skill Level*	Project Completion Requirements See each project book for complete details.	County Requirements	Fair Display Requirement
<b>Food Science</b>				
490 <i>Science Fun with Dairy Foods: The Case of the Missing Milk</i>	B	All 6 activities At least 2 learning experiences At least 2 leadership/citizenship activities Project review	Bring completed project book; be prepared to discuss the experiments completed. Bring poster or educational exhibit teaching about an activity from project. (This is required for state fair)	Exhibit an educational poster or display, teaching about an activity from project, in your 4-H Club or county wide booth.
<b>Physics</b>				
500 <i>Science Fun with Physics</i>	B	All 12 experiments At least 2 learning experiences At least 2 leadership/citizenship activities Project Review	Be prepared to discuss the experiments completed. Bring poster or education exhibit teaching about an activity from the project.	Exhibit poster or educational exhibit teaching about an activity from project. Display in your 4-H Club Booth or county wide booth.
<b>Robotics</b>				
509 <i>Robotics Essentials</i>	I	All 10 activities (including construction of a LEGO® Spike™ Prime or VEX robot) and Talking It Over questions At least 2 learning experiences At least 2 leadership/citizenship activities Project review	Bring completed project book and the robotic you have built. Be prepared to discuss construction of your robot and the information you have learned.	Exhibit robotic or educational display or educational poster that tells about your project. Display in your 4-H Club Booth or Countywide Booth.
512M <i>Robotics Master</i>	A	One major robotics project At least 2 learning experiences At least 2 citizenship activities Project records including interview, budget, and photos Judging activity	Bring completed project book and the robotic you have built. Be prepared to discuss construction of your robot and the information you have learned. Also bring your educational display (teaching observer something) or poster.	Exhibit robotic or educational display or educational poster that tells about your project. Display in your 4-H Club Booth or Countywide Booth..