

## SCIENCE and ENGINEERING

<i>Project # and Name</i>	<i>Skill Level, Age Time Commitment</i>	<i>Project Requirements for Completion, Project Judging and Fair</i>	<i>4-H Competitive and Educational Opportunities</i>
<b>490 Science Fun with Dairy Foods: The Case of the Missing Milk</b>  <b>493 Science Fun with Kitchen Chemistry</b>  <b>500 Science Fun with Physics</b>  <b>550 Young Engineers Solar Energy</b>	Beginner skill level for youth ages 8 to 14.  Beginner skill level for youth ages 8 to 14.  Beginner skill level for youth ages 8 to 14.  Beginner skill level for youth ages 8 to 14.  Minimum 2 to 4 weeks Project work time.	<ul style="list-style-type: none"> <li>◆ Complete all tasks as outlined in the project guideline's section.</li> </ul> <b>Miscellaneous Project Judging Requirements:</b> <ul style="list-style-type: none"> <li>◆ <b>Project Book:</b> Bring your completed project and records documenting activities, experiences and experiments to judging.</li> <li>◆ <b>Project Exhibit:</b> Create and bring an educational display on a topic of your choice from the project.</li> <li>◆ <b>Project Interview:</b> Answer questions about your project experience including general 4-H knowledge, project book knowledge and activities and project exhibit.</li> <li>◆ <b>State Fair Selection:</b> One member may be selected to participate from each project. No member may be selected in more than one rockets, robotics, science fun, young engineers, electricity, not just knots, small engines, ready sew mow, or self-det. STEM projects.</li> </ul> <b>County Fair Exhibit Requirements:</b> <ul style="list-style-type: none"> <li>◆ <b>Fair Exhibit:</b> Bring your educational display to exhibit in your club's booth in the Youth Building.</li> </ul>	<b>County Events</b> <b>4-H Miscellaneous Judging</b> Tues., July 9, 3 PM-7 PM, Fgrds, Annex  <b>Clark County Fair</b> <b>Club Booth/Exhibit Set-Up</b> Fri., July 19, 9 AM - 9 PM, Youth Bldg.  <b>4-H Winner's Revue</b> Tues., July 23, 7 PM, Entertainment Tent  <b>Ohio State Fair</b> <b>4-H STEM Project Judging Day</b> Sat., July 27, Lausche Youth Exploration Space

**ROBOTICS** - Members 14 years of age and older may apply for a Mechanical and Engineering Science Achievement Record Award.

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<b>509 Robotics Essential</b>  <b>512M Robotics Master</b>  Go to <a href="http://ohio4h.org/robotics">ohio4h.org/robotics</a> for more details on purchasing kits to get started.	Intermediate skill level for youth age 11 and older  Advanced skill level for youth ages 12 and older  1 to 3 months Project Work Time.	<ul style="list-style-type: none"> <li>◆ Complete all activities and talk it over questions and all tasks as outlined in the project guidelines' section. Engineer a Robot to accomplish a task.</li> </ul> <b>Miscellaneous Project Judging Requirements:</b> <ul style="list-style-type: none"> <li>◆ <b>Project Book:</b> Bring your completed project book.</li> <li>◆ <b>Project Item(s):</b> Bring your engineered robot.</li> <li>◆ <b>Project Interview:</b> Answer questions about your project experience including general 4-H knowledge, project book knowledge and activities, and project item.</li> <li>◆ <b>Robot Skill:</b> Demonstrate your robot's ability to complete tasks on your own test surface.</li> <li>◆ <b>State Fair Selection:</b> One member may be selected to participate from each project. No member may be selected in more than one rockets, robotics, science fun, young engineers, electricity, not just knots, small engines, ready sew mow, or self-det. STEM projects.</li> </ul> <b>County Fair Exhibit Requirements:</b> <ul style="list-style-type: none"> <li>◆ <b>Fair Exhibit:</b> Bring your engineered robot</li> </ul>	<b>County Events</b> <b>4-H Miscellaneous Judging</b> Tues., July 9, 3 PM-7 PM, Fgrds, Annex  <b>Clark County Fair</b> <b>Club Booth/Exhibit Set-Up</b> Fri., July 19, 9 AM - 9 PM, Youth Bldg.  <b>4-H Winner's Revue</b> Tues., July 23, 7 PM, Entertainment Tent  <b>Ohio State Fair</b> <b>4-H STEM Project Judging Day</b> Sat., July 27, Lausche Youth Exploration Space