Integrating STEM into all 4-H projects
* Science, Technology, Engineering, and Mathematics

Young people will soon be entering a society faced with complex social, economic, and environmental issues requiring scientifically- and civically-engaged individuals able and willing to participate in public discourse and contribute to the healthy functioning of our democracy. Youth need to become scientifically literate in order to be workforce ready, participants in civic debates, and critical consumers of information. 4-H STEM is designed to help youth see science as a powerful tool to make sense of and construct knowledge about the world. 4-H STEM helps youth think about and address issues in their lives that involve STEM and connect learning with real-world situations where youth can adopt and use science or technology to solve problems.

4-H Project Leaders can integrating STEM into any 4-H project, including animals, foods and nutrition, fibers and textiles, or communications and leadership. Here are a few easy steps:

- Follow the **experiential learning cycle** (do⇨reflect⇨apply).
- Ensure youth have opportunities for **inquiry and exploration** into natural phenomena where they utilize **scientific and engineering practices**.
  - asking questions
  - developing and using models; such as drawing or other physical representations
  - planning and carrying out investigations
  - analyzing and interpreting data
  - using math and computers
  - constructing explanations and designing solutions
  - engaging in argumentation
  - obtaining, evaluating, and communicating information
- **Organize learning experiences** sequentially to reinforce concepts over time.
- Introduce and embed **scientific cross-cutting concepts** such as patterns, cause and effect, scale, systems, energy, structure and function, and stability and change.
- And as with all 4-H projects, focus on **positive youth development practices**, such as ensuring physical and emotional safety, building relationships, ensuring youth-adult partnerships, connecting with the community, and focusing on skill building.

For more information, please visit http://4h.ucanr.edu/Projects/STEM/