

"To Make the Best Better"

4-H Youth Development



Discipline: All
Age Level: All
Time: 90 minutes

Next Generation Science Standard : Standards for Technology Literacy—
Standard 1: Participants will develop an understanding of the characteristics and scope of technology.

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Range Safety & Technology

Objective/Success Indicators: 4-Her's will work together in a hands-on challenge involving the engineering design process and the use of Arduino technology to resolve gun range related safety issues.

Assessment Question:

Supplies:

Arduino Uno or Duo
Laptops
Internet

Lesson Outline:

1. Form Teams
2. After hearing about gun range related safety issues instruct each team to address one of the discussed safety issues or identify other gun range safety related issues.
3. Once teams have selected an issue instruct 4-Her's to create a plan to resolve the issue using technology.
4. Teams will present and defend their plans to the group.
5. Instruct teams to begin programming their Arduino.
6. Teams will test their product.
7. Teams will be given time to make corrections if necessary.
8. Discuss outcomes, did product work, or did it fail to address issue? If it failed, were you able to identify the problem? Can the problem be fixed? If so, how? If not, can the product be redesigned? Do not let youth focus on failure. Reframe the failure as "not quite finished" and then encourage youth to identify what went wrong and continue to develop their product.

Background Information:

<http://www.pe.com/articles/safety-823581-shooting-range.html>

<http://www.magtechammunition.com/resources/safety-university/12-golden-rules/>

https://www.nssf.org/PDF/research/IIR_InjuryStatistics2013.pdf

Examples of technology used for safety measures.



