



## CALIFORNIA 4-H PROJECT SHEET SERIES



# 4-H Muzzle Loading Project



**M**uzzle loading is one of the disciplines of the 4-H Shooting Sports program, which covers the fundamentals of shooting and basic firearm safety, while developing self-motivation, self-discipline, and personal responsibility. Learning about muzzle loading offers an opportunity to access the history and technological advances of firearms. From the earliest matchlock and wheellock pistols to today's in-line rifles, muzzleloaders have seen a long evolution, spanning several centuries.

Although the invention of smokeless powder and self-contained cartridges has rendered them obsolete, muzzleloaders are still embraced by a devoted following of antique firearm collectors, historical reenactors, and even modern hunters. In this project, members will learn

- shooting proficiency
- proper handling of muzzle-loading firearms
- the difference between black powder and smokeless powder
- how to promote the highest standard of safety

## STARTING OUT, BEGINNER

- Learn and discuss the fundamental rules for safe gun handling.
- Discuss range safety and range etiquette. Learn the rules and policies of the range where your project meets and follow them.
- Discuss the types of personal protective equipment used in shooting and demonstrate proper use of them.
- Learn the types of muzzle-loading firearms and identify their parts.

## LEARNING MORE, INTERMEDIATE

- Participate in live fire shooting exercises, practicing good form and demonstrating proper safety practices.
- Set a long-term shooting proficiency goal, and several short-term goals to help you reach it.
- Keep a shooting diary to track your progress, and note any thoughts or observations on your shooting experiences.

## EXPLORING DEPTH, ADVANCED

- Attend a Black Powder Rendezvous with your project. Speak with a reenactor about life on the frontier and the use of muzzle-loading firearms.
- Plan and organize a black powder competition with your project. Invite other shooting sports projects to attend.
- Complete a state 4-H Shooting Sports workshop.

*The activities above are ideas to inspire further project development. This is not a complete list.*

*Light your spark | Flex your brain | Reach your goals*



## Expand Your Experiences!

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

- Learn how gravity, drag, and wind affect the trajectory of a projectile and how you compensate.
- Explore the science of chemical reactions, and what occurs when you fire a muzzleloader.
- Conduct your own experiment to find out which types of bullets are most accurate.

### Healthy Living

- Learn how to minimize exposure to lead while engaged in shooting sports.
- Discover the health benefits connected to hunting and eating wild game.
- Explain and demonstrate appropriate methods of securing and storing firearms and ammunition.

### Civic Engagement

- Learn about the connection between sportsmanship and citizenship. Practice them both.
- Conduct a [service-learning project](#) to clean up a shooting range on public land.
- Discover a hunting conservation organization and go to one of their meetings.

### Leadership

- Serve as a junior or teen leader in your 4-H Muzzle Loading Project.
- Learn about the 4-H California Shooting Sports Advisory Committee and apply to become a member.
- Apply to the National 4-H Shooting Sports Ambassador Program.

### College and Career Readiness

- Learn about the college scholarship opportunities offered by shooting sports foundations.
- Explore careers associated with shooting sports, including those outside the firearms industry.
- Discover colleges and universities that offer collegiate shooting sports programs.

## CONNECTIONS AND EVENTS

**State and National Shooting Sports Competitions** — Put your knowledge and shooting expertise to the test at these organized shoots.

**Presentation Days** — Share what you've learned with others through a presentation.

**Field Days** — At these events, 4-H members may participate in a variety of contests related to their project area.

## CURRICULUM

- Discipline-specific manuals are available in California to adult 4-H volunteers who complete a state 4-H Shooting Sports workshop.
- 4-H Shooting Sports: An Introduction to Muzzleloading Firearms  
<https://extension.msstate.edu/sites/default/files/publications/publications/p1563.pdf>
- Muzzle Loader  
[www.stclaircounty.org/Offices/msue/4H/ProjectBooks/Muzzle%20Loader.pdf](http://www.stclaircounty.org/Offices/msue/4H/ProjectBooks/Muzzle%20Loader.pdf)

## 4-H RECORD BOOK

4-H Record Books give members an opportunity to record events and reflect on their experiences. For each project, members document their experiences, learning, and development.

4-H Record Books also teach members record management skills and encourage them to set goals and develop a plan to meet those goals.

## RESOURCES

- National 4-H Shooting Sports, <https://4-hshootingsports.org/>
- California 4-H Shooting Sports, [http://4h.ucanr.edu/Projects/STEM/SET\\_Projects/ShootingSports/](http://4h.ucanr.edu/Projects/STEM/SET_Projects/ShootingSports/)
- Youth Shooting Sports Alliance, [www.youthshootingsa.com/](http://www.youthshootingsa.com/)
- National Muzzle Loading Rifle Association, <https://nmlra.membershipsoftware.org/>
- Civilian Marksmanship Program, <http://thecmp.org/>
- 4-H Shooting Sports Project: S.T.E.M. Connections, [www.uidaho.edu/-/media/Uidaho-Responsive/Files/Extension/4-H/Projects/4-H-Shooting-Sports-Manual.pdf](http://www.uidaho.edu/-/media/Uidaho-Responsive/Files/Extension/4-H/Projects/4-H-Shooting-Sports-Manual.pdf)





- 4-H Muzzleloader Member Record Book, [https://store.msuextension.org/Products/4-H-Muzzleloader-Member-Record-Book\\_4H755.aspx](https://store.msuextension.org/Products/4-H-Muzzleloader-Member-Record-Book_4H755.aspx)

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## 4-H Thriving Model

4-H programs done well help youth thrive. No matter what project or activities are offered, the project leader should help ensure youth engagement with a focus on these three contexts:

### FACILITATE YOUTH SPARKS

A spark is something youth are passionate about; it really fires them up and gives them joy and energy. Youth use their spark to make the world a better place.

Sparks create action, provide fuel for growth in knowledge and skills. Sparks grow a young person's networks.

Help youth find how this project may bring them joy, purpose, and direction.

To learn more: <https://tinyurl.com/y2lwct7u>

### PROGRAM QUALITY MATTERS

Research shows that youth programs must be done well if they are to make a positive difference in the lives of youth.

Quality programs ensure:

- Physical and psychological safety.
- Appropriate structure.
- Supportive relationships.
- Opportunities to belong.
- Positive social norms.
- Support for mattering.
- Opportunities for skill building.
- Integration of family, school, and community.

To learn more: <https://tinyurl.com/yxg27m3j>

### FOSTERING DEVELOPMENTAL RELATIONSHIPS

Caring, supportive adults are clearly connected to positive youth development.

Across the childhood years, youth need different things from adults as they learn, grow, and self-regulate. What should remain constant from all adult volunteers and staff:

- Expressing care through listening, warmth, and dependability.
- Challenging growth by expecting youth to do their best.
- Providing support.
- Sharing power.
- Expanding possibilities.

To learn more: <https://tinyurl.com/y6434ntw>

## For Further Information

For more UC ANR publications and products, visit our online catalog at <https://anrcatalog.ucanr.edu/>, call 1-800-994-8849, or write [anrcatalog@ucanr.edu](mailto:anrcatalog@ucanr.edu).

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