



Lesson Plan

Fencing Basics

Created: 12/2017 by the National FFA Organization

STUDENT LEARNING OBJECTIVES:

After completing these activities, students will...

1. Differentiate between various types of fencing.
2. Determine the proper fencing needed.
3. Calculate, budget and plan for fencing using www.redbrand.com.

TIME REQUIRED: 45 minutes

RESOURCES:

1. FFA.org
2. www.redbrand.com

EQUIPMENT AND SUPPLIES NEEDED:

1. A copy of the "Fencing Basics – Part 1" and "Fencing Basics – Part 2" worksheet for each student
2. Internet access for the PowerPoint
3. Internet access for www.redbrand.com

THIS QUICK LESSON PLAN WOULD WORK WELL:

1. As part of a farm management unit.
2. For problem solving and critical thinking applications.
3. As part of a fencing basics lesson.

THESE ACTIVITIES ARE ALIGNED TO THE FOLLOWING STANDARDS:

AFNR Performance Element

- AS.02. Utilize best-practice protocols based upon animal behaviors for animal husbandry and welfare.

FFA Precept

- FFA.PL-A. Action Assume responsibility and take the necessary steps to achieve the desired results, no matter what the goal or task at hand.
- FFA.PL-C. Vision Defines your ability to visualize your future and how you want to get there.

Common Career Technical Core

- AG-ANI2 Utilize best-practice protocols based upon animal behaviors for animal husbandry and welfare.
- AGPC01.02 Recognize and interpret animal behaviors and execute protocols for safe handling to facilitate safety for both animals and humans.

Common Core - Writing

- CCSS.ELA-LITERACY.W.9-10.2 Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.
- CCSS.ELA-LITERACY.W.9-10.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

Common Core - Speaking and Listening

- CCSS.ELA-LITERACY.SL.9-10.1 Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9-10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.
- CCSS.ELA-LITERACY.SL.9-10.4 Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.

Common Core - Science & Technical Subjects

- CCSS.ELA-Literacy.RST.9-10.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.

Common Core - Literacy in Science & Technical Subjects: Writing

- CCSS.ELA-Literacy.WHST.9-10.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

Common Core - Math Practices

- CCSS.MP1: Make sense of problems and persevere in solving them.
- CCSS.MP2: Reason abstractly and quantitatively.
- CCSS.MP5: Use appropriate tools strategically.
- CCSS.MP6: Attend to precision.

AFNR Career Ready Practices

- CRP.04. Communicate clearly, effectively, and with reason. Career-ready individuals communicate thoughts, ideas and action plans with clarity, whether using written, verbal and/or visual methods.
- CRP.06. Demonstrate creativity and innovation. Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization.
- CRP.08. Utilize critical thinking to make sense of problems and persevere in solving them. Career-ready individuals readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem.

Partnership for 21st Century Skills

- Communication
- Critical Thinking and Problem Solving
- Information Literacy

LESSON PLAN:

1. *Introduction:* Write this question on the board: "How does fencing for livestock animals affect you, even if you do not raise animals?" Answers will vary, but it is important for students to understand that fencing does the following:
 - a. Allows producers to properly manage animals and stay organized, which ultimately affects the consumer by ensuring that animals receive proper care as they are being raised.
 - b. Ensures safety. For example, while you are driving or riding in a car, it is less likely that animals can be a danger to you if they are properly managed.
 - c. Assists with properly following zoning and property boundaries. Adhering to these laws and boundaries ensures that land is properly managed the way it is intended.
 - d. Adds value to property. Adding proper fencing to a property adds to the aesthetic appeal and value of land.
 - e. (Others may also be added.)

Show Slides 2 through 5 of the Red Brand "Fence Basics" PowerPoint. The direct URL is

<https://ffa.box.com/s/g26txxs8ldx1hpnu681klkf904orchyf>.

As you go through the slides, discuss how fencing has changed over the years and compare how it was produced in 1889 versus now.

2. *Activity 1:* Show or have students review Slides 6 to 15, and each student will need a copy of the handout "Fencing Basics – Part 1." Students will record notes and answer questions as they move through the PowerPoint.
 - a. Slides 16 to 31 showcases various types of fence, and students will answer application questions based on the information on the "Fencing Basics – Part 1" handout.

Activity 2: Each student needs a copy of the handout "Fencing Basics – Part 2." Have students use the website www.redbrand.com to build their own fencing on either their property or the National FFA Center: 6060 FFA Drive Indianapolis, IN 46268.

3. *Follow Up:* Have students share information about the fences they built and the factors they considered.
4. *Leveling Up:* Give students a scenario including the acreage, and have them plan the fencing. Also, have students create a quote that includes the footage of fencing needed, price and type of product they would utilize.

NAME: _____

Aligned to the following standards: AS.02; FFA.PL-A.; FFA.PL-C.; AG-ANI2; AGPC01.02; CCSS.W.9-10.2; CCSS.SL.9-10.4; CCSS.RST.9-10.3; CCSS.WHST.9-10.4; CCSS.MP1; CCSS.MP6; CRP.06; CRP.08.

Fencing Basics – Part 1

DIRECTIONS:

Find your answers by reading through or listening to the "Fence Basics" PowerPoint. The direct URL is <https://ffa.box.com/s/g26txxs8ldx1hpnu681klkf904orchyf>.

Wire gauge, galvanized zinc coating, types of wire and fence knots

True/False: An 11-gauge wire will be smaller than a 20-gauge wire.

Steel is coated with _____ to protect it from rusting.

The two types of wire fencing are _____ Carbon and _____ Tensile.

Fence _____ come in three different types: Monarch Knot, Square Deal and Cross Lock.

Which type of fence knot would you want if you live in an area that has a lot of snow?

Reading fence style numbers

What does it mean if a fence style is: 1047-6-9?

10- _____

47- _____

6- _____

9- _____

Types of fence

Why would a livestock producer or a pet owner need different options when selecting fence to use?

Which fence would be best for horses? Explain.

Which type of fence would be best suited for a dog who has been digging holes to get out of a fenced-in area? Explain.

Acreage concepts

One acre of land is almost the size of a _____ field or 208' x 208'.

Homestead Act of _____ gave 160-acre parcels to 1.6 million families.

$\frac{1}{8}$ mile

5 ACRES $\frac{1}{16}$ mile

1 mile = 5,280 feet

$\frac{1}{4}$ mile = 1,320 feet = 1 roll Barbed Wire

$\frac{1}{16}$ mile = 330 feet = 1 roll Field Fence

How many rolls of field fence are needed to enclose this 5-acre plot? (Place a check mark next to the right answer.)

- _____ **4 rolls**
- _____ **6 rolls**
- _____ **10 rolls**

Fencing Basics – Part 2

Aligned to the following standards: AS.02; FFA.PL-A.; FFA.PL-C.V; AG-ANI2; AGPC01.02; CCSS..W.9-10.2; CCSS.SL.9-10.4; CCSS.RST.9-10.3; CCSS.WHST.9-10.4; CCSS.MP1; CCSS.MP6; CRP.06; CRP.08.

DIRECTIONS:

Using the Red Brand website, www.redbrand.com, follow the steps below.

1. Go to www.redbrand.com.
2. Click on “Fence Basics” on the left side of the screen.
3. Click on “Fence Calculator.”
4. Type your address **or** the address of the National FFA Center (6060 FFA Drive Indianapolis, IN 46268) inside the open box. (Scroll in or out to bring the image into focus).

Which address did you type into the box?

Objective: Build a fence for horses that keeps out wildlife and is secure enough to keep the horses properly enclosed.

5. Click on the red box “Add your First Fence,” and then follow the directions to add more sides of the fence until you have a completed pasture area that contains the following:
 - a. 4 sides of the fence.
 - b. 2 gates.
6. Complete the following regarding the fencing details:
 - a. Animal type _____
 - b. Produce type _____
 - c. Height _____
 - d. Product _____
7. Draw a sketch of your finished fenced area, and label the measurement of each side in feet:

8. Write the total cost estimate of the fence you built: \$ _____
 - a. Does the final cost surprise you? Explain why or why not.

9. Why is it important to plan and sketch a fence before construction?

10. List five factors to consider when planning for a fence:

Fencing Basics – Part 1 KEY

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True/False: An 11-gauge wire will be smaller than a 20-gauge wire.

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The two types of wire fencing are Low Carbon and High Tensile.

Fence Knots come in three different types: Monarch Knot, Square Deal and Cross Lock.

Which type of fence knot would you want if you live in an area that has a lot of snow?

Cross Lock

Reading fence style numbers

What does it mean if a fence style is: 1047-6-9?

10- Number of line wires

47- Height in inches

6- Pullout

9- Wire gauge

Types of fence

Why would a livestock producer or a pet owner need different options when selecting fence to use?

Answers will vary, but could include: Usage, type of animal, cost, durability, etc.

Which fence would be best for horses? Explain. Keepsafe V-Mesh Horse Fence

Which type of fence would be best suited for a dog who has been digging holes to get out of a fenced-in area? Explain.

Apron Netting

Acreage concepts

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Homestead Act of 1862 gave 160-acre parcels to 1.6 million families.

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