

# Biosecurity & Animal Agriculture

## Lesson Overview

**Media:** Video (26 mins.)

**Seat Time:** 5 Classes | 250 minutes teaching

**Goal:**

To analyze the role and importance of biosecurity in animal agriculture.

**Description:**

Biosecurity is an essential step in ensuring animal health and providing a safe food supply to consumers. This lesson defines biosecurity and examines how biosecurity is enforced on a national level as well as the risks which animal operations face and management practices which are put in place to mitigate these risks.

**Objectives:**

1. To define biosecurity.
2. To analyze the role of biosecurity in animal agriculture in the United States.
3. To identify biosecurity risks.
4. To discover biosecurity management practices.

## Lesson Plan

### Class 1

**Class Overview:**

- *Biosecurity Defined* Video Segment
- *A National Perspective* Video Segment
- Action Plan
- Vocabulary Handout
- Key Concepts
- Biosecurity Overview Activity
- Biosecurity Defined Check for Understanding
- A National Perspective Check for Understanding

**Essential Questions:**

1. What is biosecurity?
2. Why is biosecurity important in animal agriculture?
3. Why is biosecurity important at the national level?
4. What programs and initiatives are in place nationally to promote biosecurity?

**Step 1: Bell Ringer:**



- Write “what does the phrase ‘biosecurity’ mean” where students can see and have them write down their answers on the **Biosecurity Overview Activity**. Begin class with a discussion asking students to think of biosecurity as the term relates to people and schools. Have students think of ways we keep ourselves safe from disease and write them on the board (i.e. washing hands, cooking food thoroughly, Lysol® wipes, etc.). Conclude the discussion by explaining that these same principles apply to animal production to introduce the lesson.

**Step 2: Distribute the Action Plan, Vocabulary Handout and Key Concepts.**



- The **Action Plan** lays out a list of tasks for students to complete during the lesson.
- The **Vocabulary Handout** is a list of terms used throughout the lesson.
- The **Key Concepts** is an outline which identifies the main ideas presented in the lesson which students can fill in to aid in note taking during the lesson.



**NOTE:** If you see this icon, the item is available to be completed interactively on iCEV.

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## Lesson Plan

### Class 1 (continued)

**Step 3:** Show the ***Biosecurity Defined*** video segment.



- This video is five minutes long.
- Be sure students utilize the **Key Concepts** for this segment of the lesson.
- After viewing the video, discuss their answers to the definition of biosecurity.

**Step 4:** Have students continue the **Biosecurity Overview Activity**.



- Students should fill in the remainder of the table and answer questions 1 and 2.
- After answering these questions, have a class discussion about their answers and the importance of biosecurity.

**Step 5:** Administer the **Biosecurity Defined Check for Understanding**.



- The Check for Understanding is a short review of the content presented in the segment.

**Step 6:** Show the ***A National Perspective*** video segment.



- This video is seven minutes long.
- Be sure to have students utilize the **Key Concepts** for this segment of the lesson.

**Step 7:** Have students complete the **Biosecurity Overview Activity**.



- Students should answer questions 3 and 4 based on the information in the video segment.
- After answering these questions, have a class discussion about their answers.

**Step 8:** Administer the **A National Perspective Check for Understanding**.



- The Check for Understanding is a short review of the content presented in the segment.

**Step 9: Exit Ticket:**



- Students should hand in their **Biosecurity Overview Activities** prior to leaving class.

### Class 2

**Class Overview:**

- *Biosecurity Risks* Video Segment
- *Biosecurity Management* Video Segment
- Action Plan
- Key Concepts
- Basic Biosecurity Plan Project
- Biosecurity Risks Check for Understanding
- Biosecurity Management Check for Understanding

**Essential Questions:**

1. What are common biosecurity risks in animal agriculture?
2. How are diseases transmitted?
3. What are common risk management techniques utilized in animal agriculture?

**Step 1: Bell Ringer:**



- Have students review the **Basic Biosecurity Plan Project**. This project tasks students with developing a basic biosecurity plan for an operation. Students will begin working on the project after viewing the remainder of the video segments.

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## Lesson Plan

### Class 2

**Step 2:** Show the **Biosecurity Risks** video segment.



- This video is eight minutes long.
- Be sure students utilize the **Key Concepts** for this segment of the lesson.

**Step 3:** Administer the **Biosecurity Risks Check for Understanding**.



- The Check for Understanding is a short review of the content presented in the segment.

**Step 4:** Show the **Biosecurity Management** video segment.



- This video is six minutes long.
- Be sure students utilize the **Key Concepts** for this segment of the lesson.

**Step 5:** Administer the **Biosecurity Management Check for Understanding**.



- The Check for Understanding is a short review of the content presented in the segment.

**Step 6:** Have students begin working on their **Basic Biosecurity Plan Projects**.



- Divide students into groups of three or four.
- Students will develop a basic biosecurity plan for an operation of their choice.

**Step 7: Exit Ticket:**



- Students should submit the type of operation they are wanting to use in their **Basic Biosecurity Plan Projects**.

### Class 3

**Class Overview:**

- Action Plan
- Final Assessment
- Basic Biosecurity Plan Project

**Step 1: Bell Ringer:**



- Have students complete the interactive **Vocabulary Activity** by utilizing their student licenses and study for the **Final Assessment**.

**Step 2:** Administer the **Biosecurity & Animal Agriculture Final Assessment**.



- The Final Assessment is a comprehensive assessment covering material throughout the entire lesson. Remember, the Final Assessment can be completed interactively by students, if student licenses have been implemented.

**Step 3:** Have students continue working on their **Basic Biosecurity Plan Projects**.



- In this class, students should be researching and compiling information to include in their plan.
- Remind students they will have one more class day to work on their plans prior to presenting them to the class.

**Step 4: Exit Ticket:**



- Students should show their progress on their **Basic Biosecurity Plan Projects** such as showing a list of potential risks or management strategies.

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## Lesson Plan

### Class 4

**Step 1:** Have students continue working on their **Basic Biosecurity Plan Projects**.



- In this class, students should be researching and compiling information to include in their plan.
- Remind students they will be presenting their projects in the next class.

### Class 5

**Step 1:** Students will present their **Basic Biosecurity Plan Projects** to the class.



**Step 2: Exit Ticket:**



- Make sure students turn in their **Basic Biosecurity Plan Projects** before leaving.

## Activity

### Biosecurity Overview

This activity should be utilized in conjunction with the *Biosecurity Defined* and *A National Perspective* video segments. This activity asks students to define biosecurity prior to viewing the segments and again after viewing the segments. Additionally, this activity is designed to facilitate a class discussion on biosecurity, programs currently in place to ensure biosecurity in the United States and talk about current events related to biosecurity.

## Project

### Basic Biosecurity Plan

In groups of three or four, students will develop a biosecurity plan for one of the hypothetical situations provided. This projects will allow students to examine the thought processes which go into developing a biosecurity plan in the real world. Students should also view the *Example Biosecurity Practices* video segment which offers examples and advice from industry professionals. The plans should included items such as isolation of incoming animals, control of human contact with animals in and around the facility, procedures for controlling vehicular contact in and around the facility, changing clothing, pest control, etc. The plan will be presented to the class.

### **Modifications:**

Have students only choose two or three measures to explain and allow them to utilize the supplied scenario as the 200 word explanation of the facility.

### **Extension:**

Allow students to select an operation which is not one of the scenarios such as a local farm or operation.



# Biosecurity & Animal Agriculture

## Career & Technical Student Organizations

### FFA

- Agricultural Issues Forum
- Prepared Public Speaking
- Agricultural Communications
- Extemporaneous Public Speaking

## Career Connections

### Career Connections

Using the **Career Connections Activity**, allows students to explore careers associated with this lesson by viewing career interviews with various industry professionals. The career interviews are located on the Select Playlist drop down menu on the lesson page. If Student Licenses are being utilized, students can select the interviews to watch based on your directions. If only a Teacher License is being utilized, show students all of the career interviews and instruct them to only complete the interview form for the required number of interviews. See the **Career Connections Activity** for more details.

- Frank Garry, Veterinary Professor, Colorado State University
- Greg Grupe, Farm Manager, Betteravia Farms
- James Rietkerk, Ranch Manager
- Mike Wallace, Sheep Operations Manager, U.S Meat Animal Research Center