

Instructional Scenario

Cows to Go



Course/Duty Area: Livestock Production Management / Exploring Cattle Production

Scenario: Layton is a high school senior in Lancaster County, Pennsylvania, preparing to graduate in the spring. He has grown up helping on his grandfather's small dairy farm during the summer, which sparked his passion for cattle. Layton dreams of becoming a large-scale cattle producer in the Northeast and is considering relocating to Virginia because of its strong agricultural industry and favorable climate for forage production. However, he is unsure which segment of cattle production best fits his interests, skills, and financial goals.

To make an informed decision, Layton spends several weekends visiting cattle operations in the Shenandoah Valley and surrounding areas. These include the following:

- A family-owned dairy farm that markets fluid milk and specialty cheeses
- A purebred Angus beef operation focused on genetics, seedstock sales, and registered breeding stock
- A commercial cow/calf operation producing calves for sale to backgrounding or feedlot facilities
- A feeder calf operation that buys weaned calves and grows them to heavier weights for feedlots
- A stocker operation grazing lightweight calves on pasture before finishing
- A feedlot operation that finishes cattle on high-energy rations for slaughter

During his visits, Layton observes the following:

- Cattle management practices such as nutrition programs, health protocols, and breeding strategies
- Financial considerations including startup costs, land requirements, feed expenses, and potential profit margins
- Marketing strategies like direct-to-consumer beef sales, auction markets, and contracts with processors

He also talks with farm owners about challenges such as fluctuating feed prices, labor shortages, disease prevention, and problematic weather conditions. Layton learns that Virginia's climate supports year-round grazing with cool-season grasses but also requires planning for hay production and winter feeding.

Layton begins weighing the following factors:

- His available capital and financing options
- Land availability and cost in Virginia
- His interest in genetics versus large-scale commercial production
- Long-term sustainability and market demand for each segment
- Cattle management, financial output, and marketing aspects for each type of operation

Big Question: What are the pros and cons of each type of cattle production facility, and what recommendations will you make to assist Layton with making the right choice?

Focused Questions:

- What operation best fits Layton's current financial standing?
- What will be Layton's initial investment (e.g., land, cattle, infrastructure)?
- What will be Layton's operating costs (e.g., feed and nutrition, veterinary care, labor)?
- What are Layton's potential equipment costs (e.g., tractors, feeders, water tanks, cattle handling equipment, maintenance and fuel)?
- What are Layton's potential insurance costs (e.g., livestock insurance, liability insurance, futures contracts)? Will Layton be able to use loans or lines of credit for startup costs?

- What type of business plan will Layton need, and what type of interest rates and repayment schedules can Layton handle?
- What does Layton's breakeven analysis need to tell him, and how will this influence the type of operation he should choose?
- Which operation has the most markets in the local area?
- How much land does he need for this operation?
- What equipment is needed for this operation?

Project-Based Assessment:

Divide the students into groups to research farms in the local area. They should gather information about day-to-day management, market types and locations, equipment needs, and details on finances (e.g., labor costs). Students should develop a beginner's financial checklist for starting a cattle operation or develop a sample budget with estimated costs for a small cow-calf operation and report on their findings.

Checklist should include

1. Land & Facilities
 - Purchase or lease pasture or feedlot space
 - Install fencing and gates
 - Water systems (e.g., tanks, troughs, pumps)
 - Shelter or windbreaks for cattle
2. Livestock Purchase
 - Decide on type of operation (e.g., cow-calf, backgrounding, feedlot)
 - Research breeds and market prices
 - Budget for initial cattle purchase
3. Feed & Nutrition
 - Estimate forage needs (e.g., hay, silage, pasture)
 - Plan for supplemental feed (e.g., grain, minerals)
 - Secure feed storage (e.g., barns, bins)
4. Equipment
 - Handling facilities (e.g., chutes, head gates)
 - Feeders and water tanks
 - Tractor and basic farm tools
5. Health & Veterinary
 - Vaccination and deworming schedule
 - Emergency veterinary fund
 - First-aid supplies for livestock
6. Insurance & Risk Management
 - Livestock mortality insurance
 - Farm liability insurance
 - Consider price protection (e.g., hedging, futures)
7. Operating Expenses
 - Labor costs (e.g., your time or hired help)
 - Fuel and maintenance for equipment
 - Utilities (e.g., water, electricity)
8. Financing
 - Secure loans or lines of credit if needed
 - Understand interest rates and repayment terms
 - Build a cash reserve for unexpected costs
9. Marketing Plan

Identify target market (e.g., auction, direct sale, specialty)
Calculate breakeven price per pound
Plan for transportation and sale fees

Sample Budget: 20-Cow Cow-Calf Operation

Initial Investment

Breeding Cows (20 head @ \$1,500 each) = \$30,000
Bull (1 @ \$3,500) = \$3,500
Fencing & Gates = \$8,000
Water System = \$2,000
Handling Equipment (chute, head gate) = \$5,000
Miscellaneous Tools & Supplies = \$2,000
Total Initial Investment = \$50,500

Annual Operating Costs

Feed & Hay = \$6,000
Minerals & Supplements = \$1,000
Veterinary & Health (e.g., vaccines, deworming) = \$1,500
Pasture Maintenance (e.g., fertilizer, seed) = \$1,500
Fuel & Equipment Maintenance = \$2,000
Insurance = \$1,000
Miscellaneous = \$1,000
Total Annual Operating Costs = \$14,000

Revenue

Calf Sales (18 calves @ 500 lbs. @ \$2.00/lb.) = \$18,000
Cull Cow Sales (1–2 cows) = \$1,200
Total Revenue = \$19,200

Estimated Net (Before Loan Payments & Depreciation)
\$19,200 revenue – \$14,000 operating costs = \$5,200 annual margin
(Note: This does not include initial investment recovery or labor costs.)

Teacher Resource: [Beef Cattle Production and Management](#), PennState Extension

Scenario submitted by Shirley Kaufman, Buffalo Gap High School, Augusta County