

Buffalo Trace Education Box

Lesson 18

Raising Bison

Purpose: Students will learn about raising bison and making financial decisions when owning a business.

Subjects: Math, Economics

Materials Needed: paper, pencil (optional — calculator)

Steps:

You may lead students through the steps as a whole group or divide into small groups. Have students keep track of the expenses, then sales and calculating the profit, as you read the directions. (Note: The author has kept the expenses and sales simplified for fourth grade students.)

Expenses for your bison farm:

1. You have bought 100 acres of land to raise bison. Bison are migratory animals and need to roam. A bison cow and calf need 5-10 acres of grassland. Each acre costs \$6,000. How much does your land cost?
2. Bison need sturdy fences — with cedar posts and wire that is 6 feet tall, that is how high a bison can jump. A bull bison can weigh 2,000 pounds. Bison can “worry” a fence — that means they push or rub against the fence and posts enough to break it. Construct the fence at the bison’s eye level. You must decide on whether you will cut the cedar posts yourself with a chainsaw or buy the cedar timbers.
3. You want to make sure that the bison are not allowed to eat all the grasses in one area of the pasture, which is called overgrazing. You must give the grasses time to grow back. Be sure to place gates spaced around the perimeter of the fencing so that you can move the bison to other pasture areas and help you get in or out! So you will need to fence in 10 smaller pastures of 10 acres each. The cost to fence in 10 acres is \$7,000. How much will 100 acres cost? If you cut the cedar posts yourself, subtract the cost of the cedar posts, \$25,000.
4. You will need a source for fresh water for your bison. Some land may have a spring-fed pond or a creek. However, on this land, you will need to drill a well with a pump and provide stock tanks for your bison. Drilling a well in Indiana costs \$15 per foot. You need to go 120 feet deep. How much will the drilling cost?
5. Since you have separate pastures, you will need a water source in each pasture. You need a pipe and water tank for each of the 10 pastures. Each costs \$250. How much will 10 pastures cost? Then you can have a solar pump and black flexible piping to keep the tanks filled. That will be a total of \$1,000 added to your cost. During the winter, to keep the water from freezing, you need tank heaters. You decide to buy two heaters. Add \$50 for each heater to the cost.
6. How many bison will you buy in the fall? Each bison needs 5-10 acres of grass. Bison do not do well if they live alone. Some farmers buy only calves so that the animals can get used to people. Others buy a family unit (bull, cow and calves). Each bison costs \$2,000. How much will be the cost of the bison?

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7. You have now purchased the bison. However, the bison will not walk to your farm! You must move the bison to their new home. The bison will need to be moved in a heavy duty stock trailer that has plenty of air. Remember: Bison get very nervous when they are being moved. Each trailer is rented for \$100 a day. Each trailer will hold 3 average size bison and you will split them up according to their ages and sizes. How many trailers do you need?
8. For healthy bison, the veterinarian recommends vaccinations and worm medicine for all your bison. The medicine will prevent diseases for the bison and people. If you bought the bison from another state, the vet may need to make sure the bison are healthy according to Indiana laws. Each vaccination costs \$6 each. How much will this cost for all your bison?
9. The bison will need to be rotated to different pasture land on your property. If they eat all the grass in one fenced-in area, you will need to move them to another area of the pasture. (Bison prefer to eat grass, but some farmers also feed them hay.) You will need to herd them without spooking them. You will use an ATV, either a new one for \$10,000 or a used one for \$7,000. Which one do you buy?
10. You join the National Bison Association. The organization will help train you on how to handle your bison. The cost for a yearly membership is \$250. Do you join for one year, two years or five years?
11. Total all your expenses. This amount is called the start-up costs for your business.

Selling some of the bison:

1. At the end of one year, your herd has increased by 10 bison calves. Add 10 more to your herd number.
2. You sell some of your bison, but keep at least half of your herd. Farmers usually keep the heifer (female) calves. Decide how many to sell.
3. Depending on market price, each bison can be sold for \$3000. How much will you make?

Figuring your profit:

1. Now you will figure your profit. Do you have the amount of the total expenses?
2. Make sure you have the amount of the total sales.
3. Which is the greater amount?
4. Now subtract the amounts.
5. When you have more sales than expenses, you will have a profit. However, if you have more expenses than sales, you will have a loss the first year.
6. Many bison farmers do not have profits the first year or even the second year. Remember that this is a business which means you do not always make money every year.
7. When you continue your second year of raising bison, which expenses will you NOT have? Which expenses will be every year?

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Extensions:

- Create a name, a logo and a mission statement for your bison farm.
- Design a commercial or ad for your bison farm.

Differentiation:

- For younger students, discuss the reasons for choosing the land, fences and water the bison will need (Steps 1-5). Then begin the math skills with step 6.
- For older students, have them read the steps. If you are using small groups, each group posts the expenses (and sales) for all to see (public knowledge!).
- Use calculators to complete the steps or check answers.
- To make this a lesson about bison farming only, have students brainstorm what might be needed to start a farm and why each step would be needed (without mentioning the costs).

Resources:

- Red Frazier Bison (redfrazierbison.com, 840 W 17th St.#9, Bloomington, IN) has a video gallery on their website: Bison in Indiana, Loading/Driving Fence Posts, Moving the Herd, Animals Arrive, Bison Move to a New Pasture, Bison Grazing in Pasture, Bison in Hay Feeder!, Curious Bison Heifer. The owners have spoken at two of the Buffalo Trace Teacher Workshops. Their contact information is on their website.
- National Bison Association (bisoncentral.com)
- “Bison Production” December 2001 by Lance Gegner, NCAT Agriculture Specialist.
- “Transporting Buffalo” by Larry Butterfield
- Scholastic has several student activities and printable worksheets about profit and loss. Some are for a cost or for a free trial signup.

Note: The author has simplified the expenses and sales numbers for fourth grade math students. The numbers will vary according to the market prices, special deals and fluctuating markets. The numbers cannot be quoted or used in any business dealings.