
At the Sale Barn

Grades 9-12

Math



Objectives

Through classroom experiences, students will read about cattle auctions and solve math word problems related to buying cattle

Vocabulary

Auction—a sale at which things are sold to those who offer to pay the most

Bid—to make an offer to buy something

Bidder—the person at the auction who is bidding, or making an offer to buy something

Feeder cattle—steers or heifers mature enough to be placed in a feedlot where they will be fattened prior to slaughter

Stocker cattle—male or female cattle fed and maintained until they have reached a desirable weight to be sold for beef production

Background

Oklahoma is cattle country. Everywhere you go in our state, chances are you will see cattle grazing in fields at the side of the road. Our grasslands, that formerly fed vast herds of bison, are perfect for grazing cattle.

In 1910, just three years after statehood, the Edward Morris Company established a packing plant and livestock sales terminal on 120 acres two miles west of downtown Oklahoma City. The city fathers gave financial assistance, and Oklahoma City became the site of the state's first major industry – The Oklahoma National Stockyards Company.



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Livestock sales were handled only by private agreement between the seller and buyer using the services of commission companies, through 1961. At this time, a second method of trade was introduced, the **auction**. The auction provided even greater competition for available livestock.

With the auction came a new spurt of growth, and the Oklahoma National Stockyards Company soon became the world's largest market of **stocker** and **feeder** cattle, selling yearly receipts of well over a half a million head. Since the Stockyards opened, more than 102,000,000 head of livestock have been sold. Cattle auctions are still held Monday and Tuesday each week.

In addition to the Oklahoma National Stockyards, there are about 75 livestock auction barns scattered across the state. Cattle are sold by auction to the highest **bidder**. Swine, goats, sheep, horses and llamas are also sold at sale barns, usually on different days. Most auction barns only have sales on specific days of the week. Certain auction days may be reserved just for beef or dairy cattle or for goats or swine. Cattle may be sold at auction as stockers or feeders. Feeder cattle are sold to feed lots where they are fed until they reach a desired weight to be sold for beef production. Stocker cattle are sold to ranchers to be placed on pasture until they reach a desirable weight to be sold as feeders. Cattle may also be sold as cows, cow/calf pairs and bulls to restock herds.

It is the job of the auctioneer to get the most money possible for an animal or group of animals. Buyers look at the animal's age, size, quality and health. The auctioneer often starts with a high asking price, then drops it until he or she gets the first **bid**. Most auctions have one or more people serving as ringmen. Their job is to watch for bids from the crowd and make sure the auctioneer sees them.



Auction chant (also known as “bid calling,” “the auction cry,” “the cattle rattle,” or simply “auctioneering”) is a rhythmic repetition of numbers and “filler words” spoken by American auctioneers in the process of conducting an auction. The chant consists of at least the current price and the asking price to outbid. Auctioneers typically develop their own style.

The auction chant is a repetition of two numbers at a time which indicate the monetary amount involved with the sale of an item. The first number is the amount of money which is currently being offered by a bidder for a given item. The second number is what the next bid needs to be in order to become the “high bidder” or simply “the current man on.” In between the numbers are “filler words” which are what

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the auctioneer says to tie the chant together making it smooth and rhythmic. Filler words serve as a thinking point for both the auctioneer and the bidders. Filler words can serve to make a statement, ask questions, or can simply serve as a means of adding rhythm to the chant (which all filler words should do regardless). Typical filler words, which are taught at schools of auctioneering, are “dollar bid,” “now,” and “will ya’ give me?”. The typically taught chant for beginning auctioneers using the following pattern: “One dollar bid, now two, now two, will ya’ give me two? Two dollar bid, now three, now three, will ya’ give me three?”, and continues in this fashion until the crowd stops bidding and the item is sold to the highest bidder.

There are many tongue twisters that auctioneers practice to become an auctioneer. Most tongue twisters involve alliteration. One of the hardest, which auctioneers learn in auctioneer school, is called, “Betty Botter.” This tongue twister was written by Carolyn Wells. There are many versions of this tongue twister, but here is one for you to try, if you are interested in becoming an auctioneer.

Betty Botter

By: Carolyn Wells

Betty Botter had some butter,
“But,” she said, “this butter’s bitter.
If I bake this bitter butter,
it would make my batter bitter.
But a bit of better butter—
that would make my batter better.”

So she bought a bit of butter,
better than her bitter butter,
and she baked it in her batter,
and the batter was not bitter.
So ’twas better Betty Botter
bought a bit of better butter.

<https://www.kidspot.com.au/things-to-do/activity-articles/tongue-twisters-betty-botter/news-story/23505dd2e281a77c2d1a8f8ca83cb636>

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Teacher Resources



Activity 1: To Sell or Not to Sell, (Math) 1 50-minute class period

- Hand out Activity 1 Worksheet 1 “To Sell or Not to Sell”
- Allow students to work in pairs or individually.

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Standards



Oklahoma Academic Standards



Activity 1 – To Sell or Not to Sell (Math)

Economics 1 The student will develop and apply economic reasoning and decision-making skills.

Economics 3 The student will explain how prices are set in a market economy using supply and demand graphs and will determine how price provides incentives to buyers and sellers.

PA.A.4.3 Represent real-world situations using equations and inequalities involving one variable.

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Activity 1 Worksheet 1: To Sell or Not to Sell

Name: _____ Date: _____

Class/Hour/Teacher: _____

Directions: Cattle producers and other farmers have to daily watch market prices to notice trends in prices. They must make informed decisions about when to sell their products and buy necessary resources. You will put yourself in their shoes to see if you can make the right decisions to keep your business going in an ever-changing economy.

Sample: Cattle are sold at auction by the hundredweight (cwt), which is 100 pounds.

So, a 600-pound animal that sells for \$150 per cwt would cost \$900:

$$\$150 \div 100 = \$1.50 \text{ per pound}$$

$$600 \text{ pound calf} = 600 \times \$1.50 = \$900$$

1. You are a cattle producer looking to sell 50 calves that weigh an average of 200 pounds. The current market price is \$90 per hundredweight. You are considering feeding the calves for two more months. It costs you \$500 a month to care for them. They are expected to each gain 75 pounds and sell for \$88 per hundredweight at the end of the two months.
 - a. What can you get for the calves if you sell them today?

 - b. How much it cost to keep the calves for two months?

 - c. How much will the average calf weigh at the end of two months?

 - d. How much will you get for the calves if you sell them in two months?

 - e. Should you sell the calves today or wait two months? Why?

2. You are at a cattle auction looking to buy some steers and can't decide between two groups of 25 head each. Group A weighs an average of 200 pounds each and will sell for \$95 per hundredweight. You predict your costs for Group A to be \$15,000 in feed and care. Group B weighs an average of 150 pounds each and will sell for \$88 per hundredweight. Group B will require extra feed and time to grow to a marketable weight. You figure this group will cost \$15,000 plus an extra \$75 each to fully mature. You hope to sell your steers at 900 pounds and \$103 per hundredweight.
- a. How much will Group A cost at the sale today?

 - b. How much will Group B cost at the sale today?

 - c. How much will you sell the steers for, if the market is what you hope?

 - d. How much extra feed and care will Group B need?

 - e. What will your profit be with Group A?

 - f. What will your profit be with Group B?

 - g. Which group should you purchase today and why?

- 3. You want to sell 100 steers that weigh a total of 45,000 pounds. You have invested \$400 in feed, vet care, and housing for each animal. You sold the steers today for \$88 per hundredweight.**
- a. What has been your total cost for this group of steers?**

 - b. How much did your steers sell for?**

 - c. Did you make a profit?**

 - d. What could you do next year to make more money?**

At the Sale Barn



Activity 1 Worksheet 1: To Sell or Not to Sell (ANSWERS)

Name: _____ Date: _____

Class/Hour/Teacher: _____

Directions: Cattle producers and other farmers have to daily watch market prices to notice trends in prices. They must make informed decisions about when to sell their products and buy necessary resources. You will put yourself in their shoes to see if you can make the right decisions to keep your business going in an ever-changing economy.

Sample: Cattle are sold at auction by the hundredweight (cwt), which is 100 pounds.

So, a 600-pound animal that sells for \$150 per cwt would cost \$900:

$$\$150 \div 100 = \$1.50 \text{ per pound}$$

$$600 \text{ pound calf} = 600 \times \$1.50 = \$900$$

1. You are a cattle producer looking to sell 50 calves that weigh an average of 200 pounds. The current market price is \$90 per hundredweight. You are considering feeding the calves for two more months. It costs you \$500 a month to care for them. They are expected to each gain 75 pounds and sell for \$88 per hundredweight at the end of the two months.

- a. What can you get for the calves if you sell them today?

$$\$90 \div 100 = \$.90$$

$$50 \text{ head} \times 200 \text{ lbs} \times \$.90 = \$9,000$$

- b. How much it cost to keep the calves for two months?

$$\$500 \times 2 \text{ month} = \$1,000$$

- c. How much will the average calf weigh at the end of two months?

$$200 \text{ lbs} + 75 \text{ lbs} = 275 \text{ lbs}$$

- d. How much will you get for the calves if you sell them in two months?

$$\$88 \div 100 = \$.88$$

$$50 \text{ head} \times 275 \text{ lbs} \times \$.88 = \$12,100$$

- e. Should you sell the calves today or wait two months? Why?

Wait two months, even with the extra costs and lower selling price, you will make a greater profit margin by selling larger calves.

2. You are at a cattle auction looking to buy some steers and can't decide between two groups of 25 head each. Group A weighs an average of 200 pounds each and will sell for \$95 per hundredweight. You predict your costs for Group A to be \$15,000 in feed and care. Group B weighs an average of 150 pounds each and will sell for \$88 per hundredweight. Group B will require extra feed and time to grow to a marketable weight. You figure this group will cost \$15,000 plus an extra \$75 each to fully mature. You hope to sell your steers at 900 pounds and \$103 per hundredweight.

a. How much will Group A cost at the sale today?

$$\$95 \div 100 = \$.95$$

$$25 \text{ head} \times 200 \text{ lbs} \times \$.95 = \$4,750$$

b. How much will Group B cost at the sale today?

$$\$88 \div 100 = \$.88$$

$$25 \text{ head} \times 150 \text{ lbs} \times \$.88 = \$3,300$$

c. How much will you sell the steers for, if the market is what you hope?

$$\$103 \div 100 = \$1.03$$

$$25 \text{ head} \times 900 \text{ lbs} \times \$1.03 = \$23,175$$

d. How much extra will Group B need in feed and care?

$$25 \text{ head} \times \$75 = \$1,875$$

e. What will your profit be with Group A?

$$\$23,175 - (\$4,750 + \$15,000) = \$3,425$$

f. What will your profit be with Group B?

$$\$23,175 - (\$3,300 + \$15,000 + \$1,875) = \$3,000$$

g. Which group should you purchase today and why?

Group A, larger profits

3. You want to sell 100 steers that weigh a total of 45,000 pounds. You have invested \$400 in feed, vet care, and housing for each animal. You sold the steers today for \$88 per hundredweight.

a. What has been your total cost for this group of steers?

$$\$400 \times 100 \text{ head} = \$40,000$$

b. How much did your steers sell for?

$$\$88 \div 100 = \$.88$$

$$45,000 \text{ lbs} \times .88 = \$39,600$$

c. Did you make a profit?

No

d. What could you do next year to make more money?

Decrease costs, sell at different times for higher price