

# At the Sale Barn

## Objective

Students will read about cattle auctions and solve math word problems related to buying cattle.

## 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. At the invitation of city fathers, with both their blessing and financial assistance, Oklahoma City became the site of the state's first major industry – The Oklahoma National Stockyards Company.

Until 1961, livestock sales were handled only by private agreement between the seller and buyer through the services of commission companies. Then a second mode of trade was introduced, the auction, providing even greater competition for available livestock.

The auction helped supply a new spurt of growth, and the Oklahoma National Stockyards Company soon rose to become the world's largest market of stocker and feeder cattle, selling yearly receipts of well over a half a million head.

Since it opened more than 102,000,000 head of livestock have passed through the iron gates leading to the Stockyards operation. Cattle auctions are 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. Feeders are sold to feed lots where they are fed until they reach a desired weight to be sold for beef production. Stockers 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.

## Oklahoma Academic Standards

### GRADE 6

Number & Operations:  
1.4; 2.3; 4.2,3,4; A.3.1.

Geometry & Measurement:  
3.2. Data & Probability:  
1.1,2

### GRADE 7

Number & Operations:  
2.3,5. Algebra: 1.1; 2.2,3;  
3.3. Data & Operations: 1.

### PRE-ALGEBRA

Number & Operations: 1.2.  
Algebraic Reasoning: 3.1;  
4.1,3

## Vocabulary

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

**bid**— to make an offer for something

**bull**— an adult male bovine animal

**calf**— the young of the domestic cow

**cow**— the adult female of cattle or of any of various usually large animals

**cow-calf operation**— a method of raising beef cattle in which a permanent herd of cows is kept by a farmer or rancher to produce calves for later sale

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

**grazing**— feeding on growing grass or herbs

**heifer**— a young cow that has not had a calf

**livestock**— animals kept or raised, especially farm animals kept for use and profit

**packing plant**— an establishment for processing and packing foods, especially meat, to be sold at wholesale

**ringman**— a person who assists an auctioneer by spotting bids and signaling the information to the auctioneer, often from the ring where livestock is displayed for sale

**steer**— a male domestic bovine animal castrated before sexual maturity and especially one raised for beef

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

**terminal**— a commodity market in a trading center

## Auction Chant

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 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 high bidder

<https://www.youtube.com/watch?v=e9WPcbKFnBA>

## Procedures

1. Read and discuss background and vocabulary. Show students the video of an auctioneer from the YouTube link above. Invite an auctioneer from a local sale barn to demonstrate auctioneering and answer questions about cattle auctions.
2. Provide copies of the “Cattle Market Math” worksheet included with this lesson. Students will solve the word problems.
3. Provide copies of the “Cattle Market Report” included with this lesson.
  - Students will calculate the mean, median, mode and range for the average price per hundredweight of the cattle labeled “fleshy.” (mean: \$167.43; median: \$165.50; no mode; range: \$67)
  - Students will explain and justify which measure of central tendency would provide the most descriptive information for this data.

# Cattle Market Math

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Cattle are sold at auction by the hundredweight, which is 100 pounds. So a 600-pound animal that sells for \$100 per hundredweight would cost \$600 because—

$$600 \text{ pounds} = 6 \text{ hundredweight}; 6 \times \$100 = \$600.$$

A 625-pound animal that sells for \$100 per hundredweight would cost \$625 because—

$$625 \text{ pounds} = 6.25 \text{ hundredweight}. 6.25 \times \$100 = \$625.$$

Solve the following word problems related to buying cattle at auction. Show your work.

1. At auction, a 600 pound steer sold for \$123 per hundredweight. How much did the buyer pay?
2. A 395-pound feeder steer sold for \$202 per hundredweight. How much did the buyer pay?
3. A 420-pound feeder heifer sold for \$128 per hundredweight. How much did the buyer pay?
4. A 420-pound feeder steer sold for \$188 per hundredweight. How much did the buyer pay?
5. Five head of cattle were sold for \$7,500. Their total weight was 6,000. What was the cost of the cattle per hundredweight?
6. Fifty head of cattle, weighing an average 375 pounds sold for \$225 per hundredweight. If each steer weighed exactly 375 pounds what would be the total cost?
7. At auction, Lucy Brown bought three heifers. One weighed 752 pounds and sold for \$119 per hundredweight, one weighed 637 pounds and sold for \$135 per hundredweight, and one weighed 700 pounds and sold for \$98 per hundredweight. How much did she pay for the three heifers?
8. Robert Jones bought four heifers. One weighed 389 pounds and sold for \$216 per hundredweight, one weighed 395 pounds and sold for \$202 per hundredweight, one weighed 375 pounds and sold for \$225 per hundredweight, and one weighed 420 pounds and sold for \$188 per hundredweight. What was the total cost?
9. Travis White bought 15 head of cattle with an average weight of 389 pounds. He paid a total \$3,244.95. What was the average price per head?

# Cattle Market Math (Answers)

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Cattle are sold at auction by the hundredweight, which is 100 pounds. So a 600-pound animal that sells for \$100 per hundredweight would cost \$600 because—

$$600 \text{ pounds} = 6 \text{ hundredweight}; 6 \times \$100 = \$600.$$

A 625-pound animal that sells for \$100 per hundredweight would cost \$625 because—

$$625 \text{ pounds} = 6.25 \text{ hundredweight}. 6.25 \times \$100 = \$625.$$

Solve the following word problems related to buying cattle at auction. Show your work.

1. At auction, a 600 pound steer sold for \$123 per hundredweight. How much did the buyer pay? \$738
2. A 395-pound feeder steer sold for \$202 per hundredweight. How much did the buyer pay? \$797.90
3. A 420-pound feeder heifer sold for \$128 per hundredweight. How much did the buyer pay? \$537.60
4. A 420-pound feeder steer sold for \$188 per hundredweight. How much did the buyer pay? \$789.60
5. Five head of cattle were sold for \$7,500. Their total weight was 6,000. What was the cost of the cattle per hundredweight? \$125
6. Fifty head of cattle, weighing an average 375 pounds sold for \$225 per hundredweight. If each steer weighed exactly 375 pounds what would be the total cost? \$42,187.50
7. At auction, Lucy Brown bought three heifers. One weighed 752 pounds and sold for \$119 per hundredweight, one weighed 637 pounds and sold for \$135 per hundredweight, and one weighed 700 pounds and sold for \$98 per hundredweight. How much did she pay for the three heifers? \$2,440.83
8. Robert Jones bought four heifers. One weighed 389 pounds and sold for \$216 per hundredweight, one weighed 395 pounds and sold for \$202 per hundredweight, one weighed 375 pounds and sold for \$225 per hundredweight, and one weighed 420 pounds and sold for \$188 per hundredweight. What was the total cost? \$3271.49
9. Travis White bought 15 head of cattle with an average weight of 389 pounds. He paid a total \$3,244.95. What was the average price per head? \$216.33

# Cattle Market Report

Report Date: 5/9/2016, Oklahoma National Stockyards, Oklahoma City, Oklahoma

## FEEDER STEERS MEDIUM AND LARGE

Head	Wt Range	Avg Wt	Price Range (per hundredweight)	Avg Price (per hundredweight)	
15	388-389	389	216.33	216.33	
5	395	395	202	202	fleshy
50	369-379	375	223-231	225.83	thin-fleshed
11	405-428	418	190-199	193.92	
9	420	420	188	188	fleshy
93	466-494	485	182-190	188.56	
5	476	476	163	163	fleshy
105	466-472	469	197.50-199	198.37	thin fleshed
90	502-542	519	180-188.50	179.04	
8	517	517	165.50	165.50	fleshy
185	555-575	568	174-181.50	179.04	
7	564	564	171	171	fleshy
68	609-648	633	158-166.50	164.13	
66	609-644	631	150-156	153.27	calves
152	624	624	175	175	thin-fleshed
54	653-656	655	163-166.75	165.92	
36	656-683	675	149-159.50	155.79	calves
115	714-743	733	153.75-158.50	155.77	
12	736	736	147.50	147.50	fleshy
7	741	741	140	140	full
272	755-797	773	143-152	149.58	
32	758	758	156.50	156	fancy
9	764	764	135	135	fleshy calves
204	802-849	835	138-149.50	143.05	
630	853-898	864	138-145.25	141.69	
182	901-947	918	135-140.50	136.99	
317	951-990	961	129-135.50	133.67	
192	1002-1045	1023	126.75-129.75	127.55	
67	1064-1093	1078	123.50-128.50	125.19	
76	1162	1162	123	123	