

The State Fair of
TEXAS
Curriculum

LIVESTOCK & AGRICULTURE
GRADE 8 SOCIAL STUDIES

WHAT'S IT GONNA COST ME...TOMORROW?!
THE REAL FACTS BEHIND WHAT WE EAT





What's It Gonna Cost Me...Tomorrow?! The Real Facts Behind What We Eat



In this lesson students will:

- ★ Discover the resources needed in order for the Livestock and Agriculture industries to thrive.
- ★ Research the amount of resources necessary to sustain these industries. What happens when there is a decrease in resources?
- ★ Create a presentation explaining the factors that can cause food prices to change.
- ★ Discover the artist George Rodrigue, and create their own unique "mascot" using some of Rodrigue's techniques.

Did you know that the price of food in the supermarket changes, sometimes from day to day? Corn can cost \$1.00 a pound this week, and go up to \$2.00 a pound next week! A pound of ground beef can cost \$2.99 to \$5.99, or even more.

Agriculture and Livestock in Texas are vital for our economy and well-being, but there are many factors that affect cost and production. A major drought, like the one California is currently experiencing, could cause your favorite \$2.00 burger to increase to five bucks!

Let's explore why...

Standards

- ★ Social Studies TEKS: 8.14(B), 8.29(A), 8.29(C)
- ★ ELAR TEKS: 8.12(B), 8.15(A)
- ★ Art TEKS: 8.1(A), 8.2(A), 8.3(B)





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Before You Go

★ Have you thought about what that burger REALLY costs? Individually or with a partner, analyze the following infographics:



What does it take to make a 1/4 lb. burger?



feed	Pounds of grain and forage	
6.7		
water	Gallons for drinking and irrigating feed crops	
52.8		
land	Square feet for grazing and growing feed crops	
74.5		
energy	BTUs for feed production and transport – enough to power 7 iPads	
1,036		
GHG	Pounds of CO2 equivalent released	
13.4		

Infographic provided by Business Insider

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GRADE: Eight

SOCIAL STUDIES

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OUR FOOD AND AGRICULTURE IN NUMBERS

(DATA REFER TO THE MOST RECENT YEAR AND TO THE WORLD, UNLESS OTHERWISE SPECIFIED.)

POULTRY BIRDS MAKE UP OVER 80% OF ALL LIVESTOCK	20 AROUND BILLION CHICKENS IN THE WORLD	1.4 BILLION CATTLE IN THE WORLD	CATTLE AND BUFFALOES MAKE UP 6% OF ALL LIVESTOCK	156 MILLION TONNES OF FISH PRODUCED	AQUACULTURE PROVIDES 48% OF FISH FOR HUMAN FOOD
56% OF CHICKENS LIVE IN ASIA	7 BILLION EGGS LAID	THERE ARE OVER 1.4 BILLION SHEEP IN THE WORLD	SHEEP AND GOATS MAKE UP 7% OF THE WORLD'S LIVESTOCK	4.4 MILLION FISHING VESSELS IN THE WORLD	60% OF FISH TRADE ORIGINATES FROM DEVELOPING COUNTRIES
AGRICULTURE EMITS 5 BILLION TONNES OF CO2 EVERY YEAR	AGRICULTURE AND FORESTRY ACCOUNT FOR 2% OF TOTAL ENERGY USED	80% OF WORLD CULTIVATED AREA IS RAINFED	ANNUAL WATER WITHDRAWAL: MORE THAN 3,800 KM ³ /YEAR	12% OF THE WORLD'S LAND AREA USED FOR CROP PRODUCTION	38% OF THE WORLD'S LAND USED FOR AGRICULTURE
37 MILLION HECTARES OF ORGANIC AGRICULTURAL MANAGEMENT WORLDWIDE	FUEL WOOD SUPPLIES 10% OF GLOBAL ENERGY NEEDS	70% OF WORLD WATER WITHDRAWAL IS USED FOR AGRICULTURE	25% OF THE WORLD'S WATER IS FRESHWATER	22% OF TOTAL AREA HARVESTED USED FOR COARSE GRAINS	VEGETABLES COVER 1% OF THE WORLD'S TOTAL AGRICULTURAL AREA
340 MILLION FEWER UNDERNOURISHED BY 2015 TO MEET WORLD FOOD SUMMIT TARGET	PREVALENCE OF UNDERNOURISHMENT DECREASED 36.5% SINCE 1990-92	30% OF LAND AREA COVERED BY FORESTS	ANNUAL FOREST LOSS OF 0.11%	GLOBAL EXPORTS OF COFFEE, TEA, COCOA AND SPICES ALMOST TRIPLED BETWEEN 2000-2010	IN 2013 GLOBAL FOOD IMPORT BILL. IS SET TO REACH 1.03 TRILLION US\$
MORE THAN 840 MILLION PEOPLE ARE UNDERNOURISHED	FISH PROVIDES 17% OF ANIMAL PROTEIN INTAKE PER PERSON	400 MILLION TONNES OF PAPER CONSUMED ANNUALLY	50% OF PAPER PRODUCED NATURALLY IS RECYCLED	WORLD RESERVES OF WHEAT AMOUNT TO 147 MILLION TONNES	WORLD PRODUCTION VALUE OF AGRICULTURE 3,269,457 MILLION US\$
RICE IS THE PRIMARY STAPLE FOR OVER 1/2 THE WORLD'S POPULATION	147 HG AVERAGE ANNUAL FOOD SUPPLY PER PERSON	368 MILLION TONNES OF POTATOES WERE GROWN	69 MILLION TONNES OF ORANGES WERE HARVESTED	1 in 3 PEOPLE WORK IN AGRICULTURE WORLDWIDE	STAPLES PRODUCE 80% OF FOOD CONSUMED IN DEVELOPING COUNTRIES
MEAT AVAILABILITY IS 42 HG PER CAPITA PER YEAR	23.5 HG SUGAR AND SWEETENERS CONSUMED PER PERSON PER YEAR	107 MILLION TONNES OF BANANAS WERE HARVESTED	2.5 BILLION TONNES OF CEREALS PRODUCED	60% OF CHILD LABOURERS WORK IN AGRICULTURE	49.5% OF THE WORLD LIVE IN RURAL AREAS

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THE FACTS BEHIND FOOD PRICES

- WEATHER**

Drought, flooding and freezing reduce yields, which can cause dramatic price increases in essential crops. The 2012 U.S. drought, which is the most widespread in more than half a century, is expected to negatively impact the production of key grains like corn and soybeans and has resulted in record prices in those commodities.
- GLOBAL DEMAND**

A growing middle class in China and India means increased demand for meat and grains. The U.N. estimates 50 percent more food will need to be produced by 2030 to meet growing global demand with world population expected to reach 9 billion by 2040.
- BIOFUEL POLICY**

Due to U.S. mandates, 40-6 percent of the corn crop – or 5 billion bushels – are used for ethanol, diverting supply for other uses to its lowest level in 25 years.
- MACROECONOMIC FACTORS**

A strong U.S. dollar, relative to European and other currencies, has a dramatic effect on all commodity prices. The economic crisis in Europe and slowing growth in China have played a significant role in 2012 commodity markets.
- LIMITED FARMLAND**

Farmland is being lost at an alarming rate due to development and other factors. At the same time, food prices increase as more farmland is devoted to non-food items.
- GOVERNMENT POLICY**

Government policies, such as tariffs to support domestic production, reduce competition, and supplies available for international trade and export prices. Russia's ban on wheat exports reduced global trade abilities by 20 million metric tons in 2010/11.
- DISEASE**

Diseases and infestations cause shortages in grains and livestock, which reduce food supply. On average, roughly 35 percent of global crop production falls prey to diseases and pests.
- ENERGY COSTS**

High oil prices drive up the costs of bringing livestock to market; these costs are passed along to consumers.
- GEOLOGICAL CONFLICTS**

Prolonged unrest and political instability, impacting supply and commodity pricing, during 2012, wheat prices spiked as a direct result of protests in Egypt, one of the world's biggest wheat importers.
- DECLINING GRAIN RESERVES**

Grain stocks to buffer future are expected to be at record low levels again in 2012, meaning grain reserves are decreasing globally as we use more grains to meet rising demand.

THE FACTS BEHIND BEEF PRICES

- INCREASING FEED COSTS**

The 2012 U.S. drought has reduced grain and soybean yields and pushed up feed prices for livestock producers. During the summer of 2012, corn prices increased 60 percent and soybean meal prices increased 25 percent.
- GLOBAL DEMAND**

A growing middle class in China and India means increased demand for meat. The U.N. estimates 50 percent more food will need to be produced by 2030 to meet growing global demand, with world population expected to reach 9 billion by 2040.
- WEATHER**

Severe U.S. drought in 2011 and 2012 – and the ensuing shortage of feed and grass – resulted in ranchers sending cattle to market sooner than they would, rather than bear the cost of feeding large herds through the winter. The 2012 beef cow slaughter was 15 percent higher than the previous 5-year average, and the 2012 calf crop is expected to be at its lowest level since 1952.
- COMPETITION**

Pork and chicken price levels impact the cost of beef because these alternative protein sources are less expensive per pound and compete for consumers' spending.
- GLOBAL TRADE RESTRICTIONS**

Ten percent of beef consumed in the U.S. is imported and is taxed according to the exporting countries' tariff quotas, resulting in higher costs to consumers.
- REDUCED CATTLE WEIGHTS**

When the cost to raise cattle is high, producers must sell cattle at lighter weights. This results in less beef production, lower revenue for producers and higher prices for consumers.
- FLUCTUATING CURRENCIES**

Beef is priced in U.S. dollars, so a weak dollar means additional import costs for foreign beef and increased exports of U.S. beef to foreign consumers.
- FOOD SAFETY CONCERNS**

Food safety concerns – such as Bovine Spongiform Encephalopathy or "mad cow disease" – can have an impact on both cattle and beef prices. In the past, food safety concerns have resulted in bans on U.S. beef exports, driving down domestic cattle and beef prices, in the short term, as demand for beef decreased and supplies built up.

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Plan Your Route.

- ★ From the Texas Star, follow MLK Blvd. around behind the Cotton Bowl Stadium.
- ★ Find Cattle Barn #2 and explore.
- ★ Next, go see the Livestock Shows and Cattle Barn #1, next door.

PROJECT GOAL

- Farmer vs. Rancher! Inform the students that based on their research at the State Fair, they will decide whether they would rather work on a farm or work with livestock. They will then be given a writing prompt after the Fair, which they'll discuss in class after they've made their decision.



Optional Materials to Bring

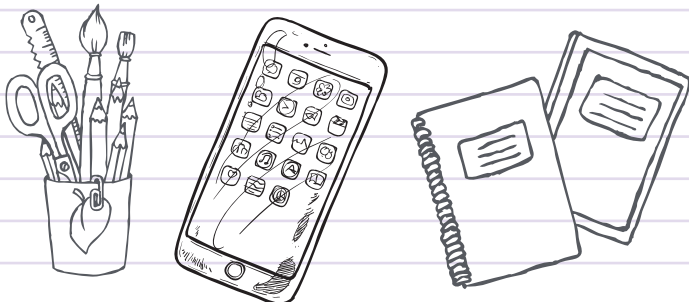
- ★ Smart Phone, Tablet
- ★ Pencil & Notepad
- ★ Sketchbook for Arts Connection

While You're There

The goal of your visit is to discover the resources needed for the Livestock and Agriculture industries to thrive. (Remember to check the Arts Connection for additional items.)

LIVESTOCK SHOWS AND BARNYARDS

- Make observations about what the cattle need. Ask the exhibitors:
- How much do the cows need to eat?
- How much water do they consume?
- What happens when there's a drought?
- What environmental factors cause a decrease in cattle production?
- What happens when there isn't enough food for the cattle?
- When there's a drought, do cattle prices change?



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Plan Your Route.

- ★ Your next stop will be the Food & Fiber Pavilion:
- ★ Go back down toward the Cotton Bowl and turn right on Nimitz Drive.
- ★ Continue walking until you see the Food & Fiber Pavilion on your right.



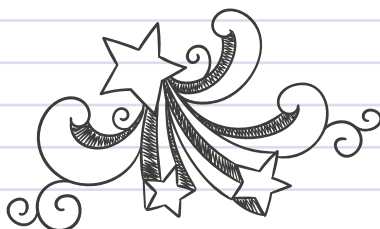
FOOD & FIBER PAVILION

- Make observations about the environment.
- Ask questions about cost, resources needed, and factors that limit resources.

After the Fair

When you return to class following your State Fair visit, you will be given the following writing prompt:

- ★ Imagine that there is a massive drought in Texas. Crops are dying and the Livestock and water reserves are dwindling. There is an emergency reserve of water ready, but not enough to water crops AND give water to the livestock.
- * Farmer vs. Rancher? Based on your research, decide what will be more important to save for the next year.
- * Your presentation can be spoken, visually presented, or handwritten.
- * As a class, discuss the importance of Agriculture and Livestock in Texas.



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Arts Connection: A Trail-Blazing Blue Dog



The artist George Rodrigue created a sort of mascot with his famous “Blue Dog.” Through his Big Dog paintings, he discovered that he was able to raise money to help his own and other communities, like the victims of the terrorist attacks in New York City on September 11, 2001.



In this lesson, students will:

- ★ Discover the artist George Rodrigue and his process for creating his famous “Blue Dog”.
- ★ Research the various animals at the State Fair.
- ★ Create their own unique “mascot” using some of the techniques of Rodrigue.

Before You Go

- ★ Begin by showing the students images of Blue Dog at the artist site: <https://georgerodrigue.com/>
- ★ How is Blue Dog different from a dog that you would see everyday?
- ★ How does Blue Dog make you feel? Why?
- ★ What do you think that the artist had in mind when he created Blue Dog?
- ★ Talk to the students about the use of color, texture, and emphasis in the Blue Dog paintings.

Next, show the students the following video featuring the artist George Rodrigue and the story of how Blue Dog came to be: https://www.youtube.com/watch?v=qp_UhYOhuLA. As you will see in the video:

- ★ Blue Dog evolved as sort of a mascot for Louisiana.
- ★ He is based on an old Cajun fairytale and became what Rodrigue describes as, “a vehicle to comment on life today.”
- ★ Ask the students what they think the artist means by that as you look at more of the Blue Dog paintings.

Because the Blue Dog was attached to something that the people of Louisiana are familiar with, it was easy for them to relate to him. The backgrounds of the paintings help tell Blue Dog’s story. No matter his surroundings, however, Blue Dog remains at the forefront, and is the emphasis of each artwork.

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While You're There

As you travel through the Livestock pavilions, pay attention to the different types of animals that you see. Ask yourself the following questions:

- ★ Is there one type of animal that is seen more than the others?
- ★ Do any of the animals stand out to you more than the others?
- ★ If you were to pick an animal that you think could be the mascot for the Fair, which one would it be? Why?



Be sure to create some sketches of the animal that you choose. Play around with the sketches, and think about color and texture as you draw.

After the Fair

Now it's time to **create your own State Fair mascot!** Think back to the Blue Dog paintings by Rodrigue that you looked at in class.

- ★ How was Blue Dog drawn in each of the works?
- ★ Was he bigger or smaller than the backgrounds?
- ★ How did the artist put the emphasis on Blue Dog in each painting?
- ★ Did he look different or the same in each piece of artwork?

As you work:

- ★ Keep color, texture, and emphasis in mind.
- ★ How can you make one of the everyday animals of the State Fair unique?
- ★ Play around with different backgrounds.
- ★ Think of the ways that people from Texas could relate to this animal the way that people from Louisiana relate to Blue Dog. **Can you relate your artwork to the drought scenario from the main lesson?**
- ★ The medium for this is up to you, but remember, **color** will play a key role in your design!

