Ranch Life
with Hank the Cowdog

★★ Ranching and Livestock ★★

By John Erickson

Curriculum Created by:
Michelle Sedberry: Science Specialist
Jenny Gaona: Social Studies Specialist
Ranching and Livestock ★

Chapter 1

Social Studies Activity

Topic: Map Skills

Standards Alignment: K.4B, 1.4A, 1.6A, 2.5A, 3.5C, 4.6A, 5.6A
You might wonder how I get around this huge ranch on a daily basis. This mapping activity will have you map out a day in my life, so prepare to be tuckered out. This activity will help you understand how to use **cardinal directions** when referencing parts of a map. As the Head of Ranch Security, it is extremely important that I am able to get from place to place as quickly as possible. We don’t want any poor soul having to deal with those pesky coyotes all by themselves. Make sure you know where everything on the ranch is at the end of the activity. I need you to get me from place to place on the map without getting lost, I hate being late to supper!

**Security Tips from Hank:**

1) Each group needs a map of the ranch and a Hank the Cowdog picture.
2) Label the cardinal directions (North, South, East, and West) on the map.
3) Each person will take turns moving Hank by following the directions below. Be prepared to answer the questions after each set of directions.
4) The width of Hank’s picture is equal to 10 square feet. There are 43,560 square feet in an acre.
5) As you travel, keep track of how many feet Hank travels.

**A Day in the Life of Hank the Cowdog**

- Place my picture at the machine shed. This is where I wake up every morning and stretch my legs.
• I then saunter North East to wet my whistle before the day gets started.
  o Where is Hank now?

• I then head South to get my breakfast from Sally May at the back door.
  o Where is Hank now?

• I then head South West to the big tank. This is where me and Slim meet up for the day.
  o Where is Hank now?

• I jump in Slim’s truck when he is ready to leave and we head to the Cake House.
  o What directions would Hank give Slim for the truck to get to the Cake House?

• After picking up the cakes, Slim and I fire up the truck again and head North up the road. We then take a turn to the west to check on the herd.
  o Where is Hank now?

• When our stomachs start to rumble, we get back in the truck and head to Ranch House for Sally May’s lunch.
  o What directions would Hank give Slim for the truck to get to the Ranch House?
• At lunch we heard about some coyotes being spotted at the Waterhole 83. It was time I got to work protecting my ranch!
  o What directions would Hank give Slim for the truck to get to Waterhole 83?

• We spotted those stinky coyotes paw prints and followed them on paw (foot) South to another water source.
  o Where is Hank now?

• After showing those pesky coyotes who was boss, we strutted our stuff back to the pickup. Slim decided to check the mail for Sally May on the way to the horse pasture. I hopped in the back of the truck because my paws were tired!
  o What directions would Hank give Slim for the truck to get to the mailbox?

• After grabbing the mail, we drove through the horse pasture to make sure all of our trusty steeds were okay after our coyote scare.
  o Map out a path from the mailbox to the horse pasture and back.
  o How long do you think it will take Hank and Slim to check the horse pasture and get back to the mail box. Explain.

• Slim dropped me and the mail off at the Ranch House and headed home.
  o What directions would Hank give Slim for the truck to get from the mailbox to the Ranch House?

• I got me some well-deserved dinner and then headed North West to get me some shut eye.
  o Where is Hank now?
<table>
<thead>
<tr>
<th>10 square feet</th>
<th>10 square feet</th>
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<tbody>
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<td>10 square feet</td>
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<td>10 square feet</td>
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</tbody>
</table>
The Bottom Line
With Hank the Cowdog

When you mapped out my day on the ranch, you might have realized why Sally May and Loper are so lucky to have a cowdog like me.

1) How many feet do you think Hank traveled by paw (foot) on this day?

2) How many feet do you think Hank traveled on the pickup truck on this day?

3) Which location that Hank visited was the farthest from the Ranch House?

4) What was the shortest distance that Hank traveled during the day?

5) How far is it from where Hank sleeps to where Hank eats?

6) What do you think was Hank’s favorite part of his day?
★ Ranching and Livestock ★

Chapter 2

Science Activity

Topic: Food Chains, Food Webs, Flow of Energy

Standards Alignment: 2.9C, 3.9B, 4.9A, 5.9B
You might be wondering what all these cards are for and I’ll tell you. This is a game to help you understand how all the animals on the ranch compete for food. There are a lot of different kinds of plants on the ranch and we call them the producers. Many animals on the ranch eat short grasses like our cattle, horses, and chickens, but there are a lot of wild animals who wonder on the ranch and eat the plants too. Loper calls these animals herbivores. As the Head of Ranch Security, I try to keep those critters out, but a cowdog has to sleep sometimes and well, it’s a big ranch. Then there are the animals that eat the plants and animals on our ranch. I don’t like to talk about this too much, but it is a part of the food web and I guess we all have to eat. My human, Loper, calls these animals omnivores. The last category of animals some people call carnivores, but I call them...criminals, cattle killers, vermin, my number one enemies! They kill any animal they can find and eat ‘em. It is disgusting! Well enough about that. I hope you enjoy the game and learn how all living organisms on the ranch depend on each other for energy.

Security Tips from Hank:

**Game set up:**
Play Piles

<p>| | | | |</p>
<table>
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</table>

Materials:
Food Web
Cards
1) Deal out 6 cards to each player. The remaining cards will go into the draw pile.

2) The player to the right of the dealer has the first opportunity to play. Draw a card from the draw pile and discard a producer (plant) in a play pile spot. If the first player does not have a producer the turn passes to the next player.

3) Once a producer has been played, the next player draws a card and can start a new pile with another producer or play an herbivore on top of the producer.

4) Play continues until a carnivore is played and ends the food chain in a play pile. The player who played the carnivore takes the pile and has earns a point.

5) Play continues until all cards in the draw pile are gone. When the last card is drawn play will continue until no one else can play.

*Only 4 play piles can be going at one time.

**Lose a Turn:** If a player draws a Lose a Turn Card they may save it or use it. To use the card, place it in front of the player who you want to skip. The skipped player will discard the Lose A Turn Card on their next turn.

**Wild Card:** If a player draws a Wild Card they may save the card or use it to play on any play pile.

**Winner:** The person with the most food chains wins!
<table>
<thead>
<tr>
<th>Character</th>
<th>Grass Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drover (Cowdog)</td>
<td>Grass: Buffalo Grass</td>
</tr>
<tr>
<td>Hank (Cowdog)</td>
<td>Grass: Blue Gramma</td>
</tr>
<tr>
<td>Pete (Cat)</td>
<td></td>
</tr>
<tr>
<td>Coyote</td>
<td></td>
</tr>
<tr>
<td>Loper (Human)</td>
<td>Grass: Wheat Grass</td>
</tr>
<tr>
<td></td>
<td>Grass: Side Oats Gramma</td>
</tr>
</tbody>
</table>
Hank the Cowdog: Ranching and Livestock Chapter 2 Food Chain Game
Coyotes
Coyotes
Wild Dogs
Ants
Skunk
Chicken
Buzzard
Chicken
Wild Turkeys

Created by Michelle Sedberry
Hank the Cowdog: Ranching and Livestock Chapter 2 Food Chain Game
Created by Michelle Sedberry
Hank the Cowdog: Ranching and Livestock Chapter 2 Food Chain Game
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Longhorn Steer</strong></td>
<td><strong>Longhorn Steer</strong></td>
<td><strong>Longhorn Steer</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Grass Hay</strong></td>
<td><strong>Wheat Hay</strong></td>
<td><strong>Sorghum Hay</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Oat Hay</strong></td>
<td><strong>Alfalfa Hay</strong></td>
<td><strong>Rabbit</strong></td>
</tr>
</tbody>
</table>

Created by Michelle Sedberry
Hank the Cowdog: Ranching and Livestock Chapter 2 Food Chain Game
Mouse
Prairie Dogs
Quail
Burrowing Owl
Young Deer
Young Calf
Porcupine
Rattlesnake
Wild Card
<table>
<thead>
<tr>
<th>Grass: Buffalo Grass</th>
<th>Grass: Blue Gramma</th>
<th>Grass: Side Oat Gramma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grass: Wheat Grass</td>
<td>Grass: Side Oat Gramma</td>
<td>Grass: Wheat Grass</td>
</tr>
<tr>
<td>Grass Hay</td>
<td>Wheat Hay</td>
<td>Sorghum Hay</td>
</tr>
</tbody>
</table>

Created by Michelle Sedberry
Hank the Cowdog: Ranching and Livestock Chapter 2 Food Chain Game
When you played the game, you might have noticed there were a lot of producer cards. In a balanced ecosystem, there are many more producers than herbivores, omnivore and carnivores.

1) What might happen if there were not very many producers on the ranch?

2) Which type of animals would be impacted the most by a shortage of producers?

3) Draw an example of a food chain on Hank’s Ranch.

4) What is the difference between a food chain and a food web?

5) Why do you think the ranch does not have any carnivores if they are an important part of a food chain?
Security Briefing

with Hank the Cowdog

★ Ranching and Livestock ★

Chapter 4

Social Studies Activity

Topic: Choose Your Own Adventure

Words of Wisdom from Hank

Security Tips from Hank:

Loper and Sally May had to make a lot of choices when they decided to buy a ranch and live as cowpokes. Each decision they made had an impact on everyone inside the ranch. They can’t feed the most important person on the ranch (their cowdog) unless they are making a **profit** in the cattle **market**. So I have to keep on top of them to make sure Loper is not using our money for shiny new spurs instead of cow feed. Sally May and Loper have to make sure all of the ranch’s **needs** (feeding Hank) are taken care of, before they purchase their **wants** (Loper’s fancy spurs). Help Sally May and Loper make good choices as you read through the book. Remember, the most important **need** of the ranch is to keep the head of security happy!

**Activity:**

1) Each student or group of students needs the Choose Your Own Adventure Book: “Will Hank Get to Eat?”.
2) Students will read through the book and make choices for Sally May and Loper.

Created by Jenny Gaona
Hank the Cowdog: Ranching and Livestock Chapter 4- Choose Your Own Adventure Activity
Thanks for playing-
Will Hank Eat?

Choose Your Own
Adventure Activity

Created by Jenny Gaona
The dismounted young cowboy asked the old hand,  
“What does it mean when they say ‘Ride for the brand’?”

The grizzled old-timer’s age seemed to drop years,  
And he sat straight up in the saddle as he surveyed the steers.

“It means a lot of different things, son.  
It has a lot to do with what’s lost and what’s won.  
I ain’t talking about gambling, but earning a living,  
Hard work, trust, respect, taking, and giving.

“It means you don’t never foul up the land,  
And you don’t take unfair advantage or rob.  
You work hard, even when the work’s rough as a cob.  
That’s part of what it means to ride for the brand.

“It means you help your neighbors and your friends,  
And you help even strangers just passing through.  
It means you hire on a hungry saddle-tramp  
Who needs a place to winter past the cold and damp.

“It means you don’t let the poor folks go hungry  
Just ‘cause they’re down and short on grub and luck.  
And it means that you don’t work just for a buck,  
But ‘cause you need work like water’s needed by a tree.

“It means you can be trusted, and that you trust each pard,  
To do the chores that are needed, no matter how hard.  
‘Cause you’re all riding for the same outfit,  
And you’re all striving together to benefit it.

“It means you keep searching for that one last stray,  
Even though it’s the end of the day,  
Even though you’d rather stop and go to town.  
It means you don’t lay your responsibility down.”

“It means you give an honest day’s work for an honest day’s wage.  
Whether you’re in the corral or out riding the range.  
Every job’s important, and there ain’t none that ain’t.  
It’s not the cowboy way to quit though it’d be easier to say ‘I cain’t.”

“It means you’ll not complain when you help dig a well,  
Nor even have to be asked to spell a tired cowpoke who’s stove-up.  
It means you’ll work with others as well as you’ll work alone.  
And that even when you’re tired to the bone, you’ll cowboy-up.

“That’s what it means, that, and a whole lot more. It means that you’ve got pride in yourself, your job,  

© 1999 Paul Harwitz All Rights Reserved. This poem may not be reprinted or reposted without the author’s written permission.
Loper and Sally May had to make a lot of choices when they decided to buy a ranch and live as cowpokes. Each decision they made had an impact on everyone inside the ranch. They can’t feed the most important person on the ranch (their cowdog) unless they are making a profit in the cattle market. So I have to keep on top of them to make sure Loper is not using our money for shiny new spurs instead of cow feed. Sally May and Loper have to make sure all of the ranch’s needs (feeding Hank) are taken care of, before they purchase their wants (Loper’s fancy spurs).

Help Sally May and Loper make good choices as you read through the book. Remember, the most important need of the ranch is to keep the head of security happy!
Sally May and Loper want to buy a ranch and live as cowpokes.

What should they do?

A) Get a loan from a bank and use the money to rent land and run a ranch. Turn to page 2.

B) Decide to stay and live in the city. Turn to page 5.

Sally May and Loper make a profit and have a successful year on the ranch. They look forward to next year!

Turn to page 15.
Did Sally May and Loper make a profit on their ranch this year?

The total amount of money they borrowed from the bank was $1,000,000.00

A) Yes. Turn to page 14.
B) No. Turn to page 5.

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How many acres should Sally May and Loper rent? They have a land budget of $40,000. Rent for land is $5 per acre per year.

Land $40,000.00
Cattle $600,000.00
Feed $450.00
Pickup $25,000.00
Stock Trailer $50,000.00
Cowpokes $100,000.00

What should they do?

A) Rent 7,500 acres of land. Turn to page 3.
B) Rent 9,000 acres of land. Turn to page 5.
Sally May and Loper need to buy bulls and cows for their ranch. What should they do?

A) Sally May and Loper buy 150 bulls and 150 cows. Turn to page 4.

B) Sally May and Loper buy 280 cows and 20 bulls. Turn to page 6.

Sally May and Loper realize they do not have enough feed for winter. Turn to page 9.
Sally May and Loper head to the spring market to sell their calves. The cattle market is high.

What should they do?

Sally May and Loper bought too many bulls and not enough cows. They do not have enough calves in the Spring to sell and make a profit.

Sally May and Loper are not able to pay back their loan from the bank.

Sally May and Loper sell 200 calves for $5,000 each. Turn to page 13.

Turn to page 5.
Sally May and Loper do not make enough money to feed their cowdog.

Hank has to go hungry.

Sally May and Loper have to decide on how much feed they are going to buy for the cows on their ranch to make it through the winter months. Feed costs $150 dollars per month.

What should they do?

A) Sally May and Loper buy $450 dollars worth of feed. Turn to page 11.

B) Sally May and Loper buy $100 worth of feed. Turn to page 12.
Loper goes to the bank and asks if he can borrow more money.

The bank says no.

Sally May and Loper need to check on their cattle.

What should they do?

A) Sally May and Loper buy 15 horses and will pay for 15 cowboys room and board. Turn to page 7.

B) Sally May and Loper buy a pickup truck and a stock trailer. They also employ 2 cowboys to work on the ranch. Turn to page 8.

Turn to page 5.
All of the horses do not fit into the barn and have to stay in the outdoor corral. 5 horses run off during a lightning storm.

7 cowboys leave the ranch because they could make more money working for another rancher.

Fall has come and Sally May and Loper have to make some decisions. The grass has stopped growing and it now has no food value for the cattle.

What should they do?

A) Sally May and Loper keep all of their cattle because the market is low. Turn to page 10.

B) Sally May and Loper sell half of their calf crop, but the market is low. Turn to page 9.
Sally May and Loper have to make a lot of decisions when they are running the ranch. These choices can impact the most vital needs of a cattle ranch - what are you going to feed your cowdog? Were you able to be successful and help Sally May and Loper make a profit on their cattle ranch?

1) What was the most difficult decision you had to make in the book?

2) What decisions would have made the ranch fail? Explain.

3) What decisions would have helped the ranch to succeed? Explain.

4) Did the ranch make a profit? Explain.

5) What recommendations would you give Sally May and Loper for next year?
Ranching and Livestock

Chapter 4

Social Studies Activity

Topic: Impact of Technology

Standards Alignment: K.13C, 1.16C, 2.17B, 4.20B, 5.23C
Words of Wisdom from Hank

Security Tips from Hank:

Loper needs a lot of equipment to run his ranch like a well-oiled machine. This ranch is huge! Me and Slim wouldn’t be able to get where we needed to go on a daily basis by just walking on our four paws (or like you guys say- on two feet). Slim and I use the pickup to get around on most days and when we are transporting the cattle we use a stock trailer. Herding those cows on the stock trailer can be tricky business so I have to help Slim and the boys to make sure all of those cows get where they need to be. It is rough being the most important part of a ranch! Could you imagine how hard my day would be without this technology?

Activity:

1) Each student or group of students needs the handout: Life With or Without Technology.

2) As students read through chapter four (pages 15-22), they need to fill in the handout explaining what life is like with and without a truck and what life is like with or without a stock trailer.
<table>
<thead>
<tr>
<th>Pickup Truck</th>
<th>Stock Trailer</th>
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</thead>
<tbody>
<tr>
<td>Life with Technology</td>
<td>Life without Technology</td>
</tr>
</tbody>
</table>
Technology can really make a difference in the daily life of a cowdog. Technology can change the way people work and how people meet their basic needs. I know my paws would be plum wore out if we didn’t have the truck and the stock trailer to help us out on the ranch!

1) Do you feel that having a truck is beneficial for a ranch?

2) Give three reasons explaining how a truck can have a positive impact on ranch life.

- 
- 
- 

3) What do you think cowboys would have to do if they did not have a stock trailer?

4) Name one way technology has had a positive impact on how you live your daily life.

5) Name one way your life would be different without technology.
Ranching and Livestock

Chapter 4

Science Activity

Topic: Life Cycles

Standards Alignment: 1.10C, 2.10C, 3.10C, 4.10C
Words of Wisdom
from Hank

Security Tips from Hank:

As the Head of Ranch Security, knowing the life cycles of the animals and insects on the ranch is pretty darn important. Spring is an exciting time of year because all the critters starting have young. I like playing with the young animals, but as the Head of Ranch Security I have to be on the watch out for predators like coyotes, wild dogs, and anything else looking for an easy meal. The insects on the ranch are not as exciting, but by knowing the stages of their life cycles I can knock over buckets of water or spread out piles of manure to help control the populations. I will admit Loper gets pretty mad at me sometimes for making a mess, but a stern talking to is worth not getting bit by mosquitos and flies!

Activity:

1) Give each group of students a sorting mat. There is a legal size mat and 8.5X11 mat. Mats can be laminated to allow students to write on them and compare multiple life cycles.
2) Give students two life cycles to compare. There are four animal life cycles and two insect life cycles found in this activity.
3) Students will first sequence the life cycle cards using the fact cards for clues.
4) Once cards are sequenced they will discuss what is alike and different about the two life cycles.
5) Once students are finished with the task have them bag their life cycle cards and pass them to another team. They will repeat steps 1-5.

Materials:
- Sorting Mat
- Life Cycle Cards
- Vis-a-Vis

Created by Michelle Sedberry
Hank the Cowdog: Ranching and Livestock Chapter 4 Ranch Life Cycles
Ranch Life Cycles

Same

Different

Created by Michelle Sedberry
Hank the Cowdog: Ranching and Livestock Chapter 4 Ranch Life Cycles
Life Cycle of a Cow

Stage 1 Mating
Male- Bull
Female- Cow
A Cow mates at 3 years.

Stage 2 Gestation
A baby calf grows inside the mother about 9 ½ months.

Stage 3 Calf
The calf drinks its mother’s milk for about 2 months.

Stage 4 Adult
A cow lives about 15 years.

Life Cycle of a Horse

Stage 1 Mating
Male-Stallion
Female-Mare
A mare mates at 3 years.

Stage 2 Gestation
A baby foal grows inside the mother about 1 year.

Stage 3 Foal
The foal drinks its mother’s milk for about 1 year.

Stage 4 Adult
A horse lives 25-30 years.
Life Cycle of a Chicken

Stage 1 Mating
Male-Rooster
Female-Hen
A Hen will start laying eggs at the age of 5 months.

Stage 2 Gestation
A baby chicken grows inside the egg about 5 months.

Stage 3 Chick
The baby chick forges for food about 1-2 hours after hatching.

Stage 4 Adult
A chicken lives 8-10 years.

Life Cycle of a Dog

Stage 1 Mating
A female mates at 1 year.

Stage 2 Gestation
A baby puppy grows inside the mother a little over 2 months.

Stage 3 Mother and Puppy
The puppy drinks its mother’s milk for about 4 weeks.

Stage 4 Adult
A dog lives about 12 years.
Life Cycle of a Stable Fly

Stage 1 Egg
A female lays 25-50 eggs. Eggs hatch in 1-4 days.

Stage 2 Larva
The larva eat decaying material and stay in this stage from 6-30 days.

Stage 3 Pupa
The pupa stage lasts 12-16 days and is a non-feeding stage.

Stage 4 Adult
An adult lives about 2-3 days and feeds on blood. Total Life Span: 23-52 days

Life Cycle of a Mosquito

Stage 1 Eggs
A female lays a raft of 40-400 eggs in water. The eggs hatch in 7 days.

Stage 2 Larva
Larva live in water for four molts and eats organic matter.

Stage 3 Pupa
The pupa stage lasts about 2 days. This is a non-feeding stage.

Stage 4 Adult
An adult lives about 1 week. Total Life Span: 14-30 days
The Bottom Line
With Hank the Cowdog

When you sequenced your life cycle cards you may have noticed patterns between the different life cycles.

1) What patterns did you notice in the animal life cycles?

2) What were the main differences between the animal life cycles? Pick another animal you might find on Hank’s ranch. Predict the stages of its life cycle and draw them below. Research the animal to see if you were right.

3) How was the insect life cycles different from the animal life cycles?

4) What was similar about the two insect life cycles you studied?

5) What might happen if one stage of a life cycle was disrupted? For example, if there was a drought what stage of a mosquito life cycle would be affected?
Security Briefing

with Hank the Cowdog

★ Ranching and Livestock ★

Chapter 5

Science Activity

Topic: Weather

Standards Alignment: K.8A, 1.A, 2.8A, 3.8A, 4.8A
Words of Wisdom from Hank

Security Tips from Hank:

It’s me again, Hank the Cowdog. The weather outside is rumblin’ and I remembered I hadn’t told you anything about weather on the ranch. As the Head of Security, I must be on constant alert when it comes to weather here on the ranch. It is my job to bark and alert Loper when the weather starts to get rowdy. Let me explain, when I hear thunder it could mean lightning strikes, hail stones, or a Texas twister (tornado). When the temperature drops to freezing I can’t snuggle up to a fire, I am on high alert for a snow storm or even a blizzard. The weather on a ranch can damage property or cause harm to the plants and animals.

Activity:

1) Provide each student with a graphic organizer to complete while reading Chapter 5 Weather. They will write down observations Hank describes during the chapter, what causes the weather, and the affect the weather has on the ranch. Some answers have been provided because the information is not provided in the chapter.
# Weather on the Ranch

<table>
<thead>
<tr>
<th>Type of Weather</th>
<th>Observations</th>
<th>Cause of Weather</th>
<th>Affect of Weather on the Ranch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drought</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hail</td>
<td></td>
<td>Strong updrafts and cloud temperatures below 0°C cause hail to form</td>
<td></td>
</tr>
</tbody>
</table>
| Snow and Blizzards  | • High winds during a snow storm cause drifts  
• Temperatures below 0°C cause precipitation to freeze and fall as snow |                                                                                  |                                |
| Lightning           |                                     |                                                                                  |                                |
Weather on the Ranch
Answer Key

<table>
<thead>
<tr>
<th>Type of Weather</th>
<th>Observations</th>
<th>Cause of Weather</th>
<th>Affect of Weather on the Ranch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drought</td>
<td>• Cracks in the ground</td>
<td>Prolonged periods with no rain</td>
<td>• Wildlife struggles to find water</td>
</tr>
<tr>
<td></td>
<td>• Grass turns brown and stops growing</td>
<td></td>
<td>• Cows produce less milk for their young</td>
</tr>
<tr>
<td></td>
<td>• Hot dry winds</td>
<td></td>
<td>• Producers will die</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Natural water sources dry up</td>
</tr>
<tr>
<td>Hail</td>
<td>• Grass gets beat down</td>
<td>Strong updrafts and cloud temperatures below 0°C cause hail to form</td>
<td>• Cattle have to be moved to other pastures</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Food might have to be supplemented with hay or cow cakes</td>
</tr>
<tr>
<td>Blizzards and Snow</td>
<td>• Snow piles up in drifts</td>
<td>• High winds during a snow storm cause drifts</td>
<td>• Ranchers can’t move between pastures to feed cattle</td>
</tr>
<tr>
<td></td>
<td>• Fence posts, roads, and equipment can be covered with snow</td>
<td>• Temperatures below 0°C cause precipitation to freeze and fall as snow</td>
<td>• Cattle can starve to death</td>
</tr>
<tr>
<td>Lightning</td>
<td>• Clouds build up, but instead of rain they deliver lightning</td>
<td>Dry air</td>
<td>• Grass fires</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• If windy a whole ranch can be burned quickly</td>
</tr>
</tbody>
</table>
The weather on the ranch can cause a lot of damage to plants and animals. Predict what would happen in each of the events below.

1) During a blizzard on the ranch snow drifts covered the fences and roads to the pastures. How would this event affect the ranch?

2) After 6 months of no rain the air is dry and warm on the ranch. In the distance there are storm clouds building up. What weather might result from the storm clouds? (There are different possibilities)

3) During a drought what might happen if a West Texas wind storm hit the ranch?

4) How does weather affect your life? How does it change your activities?
★ Ranching and Livestock ★

Chapter 5

Science Activity

Topic: Weather

Standards Alignment: K.8A, 1.8A, 2.8A, 3.8A, 4.8A
Words of Wisdom from Hank

Security Tips from Hank:

It’s me again, Hank the Cowdog. The weather outside is rumblin’ and I remembered I hadn’t told you anything about weather on the ranch. As the Head of Security, I must be on constant alert when it comes to weather here on the ranch. It is my job to bark and alert Loper when the weather starts to get rowdy. Let me explain, when I hear thunder it could mean lightning strikes, hail stones, or a Texas twister (tornado). When the temperature drops to freezing I can’t snuggle up to a fire, I am on high alert for a snow storm or even a blizzard. The weather on a ranch can damage property or cause harm to the plants and animals.

Activity:

1) Provide each student with a graphic organizer to complete while reading Chapter 5 Weather. They will write down observations Hank describes during the chapter, what causes the weather, and the affect the weather has on the ranch. Some answers have been provided because the information is not provided in the chapter.
# Weather on the Ranch

<table>
<thead>
<tr>
<th>Type of Weather</th>
<th>Observations</th>
<th>Cause of Weather</th>
<th>Affect of Weather on the Ranch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drought</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hail</td>
<td></td>
<td>Strong updrafts and cloud temperatures below 0°C cause hail to form</td>
<td></td>
</tr>
<tr>
<td>Snow and Blizzards</td>
<td>• High winds during a snow storm cause drifts</td>
<td>• Temperatures below 0°C cause precipitation to freeze and fall as snow</td>
<td></td>
</tr>
<tr>
<td>Lightning</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Weather on the Ranch

## Answer Key

<table>
<thead>
<tr>
<th>Type of Weather</th>
<th>Observations</th>
<th>Cause of Weather</th>
<th>Affect of Weather on the Ranch</th>
</tr>
</thead>
</table>
| Drought           | • Cracks in the ground  
                    • Grass turns brown and stops growing  
                    • Hot dry winds                  | Prolonged periods with no rain                                                   | • Wildlife struggles to find water  
                                                                            • Cows produce less milk for their young  
                                                                            • Producers will die  
                                                                            • Natural water sources dry up      |
| Hail              | • Grass gets beat down                                                      | Strong updrafts and cloud temperatures below 0°C cause hail to form               | • Cattle have to be moved to other pastures  
                                                                            • Food might have to be supplemented with hay or cow cakes |
| Blizzards and Snow| • Snow piles up in drifts  
                          • Fence posts, roads, and equipment can be covered with snow              | • High winds during a snow storm cause drifts  
                                                                            • Temperatures below 0°C cause precipitation to freeze and fall as snow | • Ranchers can’t move between pastures to feed cattle  
                                                                            • Cattle can starve to death        |
| Lightning         | • Clouds build up, but instead of rain they deliver lightning                | Dry air                                                                          | • Grass fires  
                                                                            • Burn grasses cattle eat to survive  
                                                                            • If windy a whole ranch can be burned quickly  |
The weather on the ranch can cause a lot of damage to plants and animals. Predict what would happen in each of the events below.

1) During a blizzard on the ranch snow drifts covered the fences and roads to the pastures. How would this event affect the ranch?

2) After 6 months of no rain the air is dry and warm on the ranch. In the distance there are storm clouds building up. What weather might result from the storm clouds? (There are different possibilities)

3) During a drought what might happen if a West Texas wind storm hit the ranch?

4) How does weather affect your life? How does it change your activities?
Security Briefing
with Hank the Cowdog

★ Ranching and Livestock ★

Chapter 6
Science Activity

Topic: Structure and Function, Adaptations

Standards Alignment: K.10A, 1.10A, 2.10A, 3.7D, 3.10B, 4.10B, 5:10B
Running a ranch is big business. There is a lot of information that Loper has to know about his cattle. There are many different breeds of cattle and each breed has adaptations that make it suitable for living in certain climates. Our ranch is located in the Panhandle which is in the Great Plains of Texas. Our climate is hot and dry. The cattle that roamed this area long before our ranch was established was the Texas Longhorn. They are perfectly suited for our area and we even still have some Longhorns on the ranch, but I don’t mess around with those guys!

Activity:

1) Look at your Cattle Breed Cards and find things each breed has in common and things that are different.

2) Pretend you are starting a ranching business. Decide as a group what breed of cattle you would like to sell. You will use your fact card to help you “sell” your cattle at auction. (The auction is where ranchers bring their cattle and sell them to other ranchers.)

3) Make a visual to help advertise the benefits, adaptations, and inherited traits of your cattle. You will use this visual to share your information with the class. Remember, ranchers will be using the cattle you sell to reproduce with their own cattle. You will want to emphasize the inherited traits because those traits will be passed on to the young calves in their herd.
<table>
<thead>
<tr>
<th>Breed</th>
<th>Image</th>
<th>Benefits</th>
<th>Origin</th>
<th>Size</th>
<th>Color</th>
<th>Adaptations</th>
</tr>
</thead>
</table>
| Hereford   | ![Hereford](image) | • Beef sells for high price  
• High sell price for calves  
• Lower winter costs  
• Long life span | England                 | Bull 1,800 pounds Cow 1,200 pounds | Red to yellow with white face | This hardy breed can withstand tough climates and weather. |
| Angus      | ![Angus](image)   | • High quality meat  
• Relatively hardy  
• Calm  
• Calves easily | Scotland               | Bull 1,870 pounds Cow 1,200 pounds | Black                      | Their color prevents sun burns and cancer. |
| Red Angus  | ![Red Angus](image) | • Long life span  
• Quiet and easy going  
• Good maternal instincts and easy calving  
• High quality marbled meat | England and Scotland   | Bull 1,400 pounds Cow 1,100 pounds | Red                        | The cattle are hardy to a variety of weather conditions. |
| Brahmins   | ![Brahmins](image) | • Thrives in warm tropic conditions  
• Intelligent, shy, and sensitive to treatment  
• Quick growth  
• Loose skin allows the cow to cool down and releases an oil that repels insects. Their short glossy hair reflects sunlight. Hump provides fat energy. | India                   | Bull 2,000 pounds Cow 1,200 pounds | Light gray, red, and black | |

Created by Michelle Sedberry  
Hank the Cowdog: Ranching and Livestock Chapter 6 Cattle Adaptations
<table>
<thead>
<tr>
<th>Breed</th>
<th>Origin</th>
<th>Size: Bull/Cow</th>
<th>Color</th>
<th>Benefits:</th>
<th>Adaptations:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Zebu</strong></td>
<td>Southwest Asia</td>
<td>440 pounds/331 pounds</td>
<td>Red or gray</td>
<td>• Heat tolerant</td>
<td>Loose skin allows the cow to cool down and releases an oil that repels insects. Their short glossy hair reflects sunlight. Hump provides fat energy.</td>
</tr>
<tr>
<td><strong>Brangus</strong></td>
<td>United States</td>
<td>1,800 pounds/1,000 pounds</td>
<td>Black or red</td>
<td>• Resistant to heat and high humidity</td>
<td>Hump provides fat energy. The cattle will produce more hair in cooler conditions and are adaptable to most climates.</td>
</tr>
<tr>
<td><strong>Braford</strong></td>
<td>United States: Louisiana and Australia</td>
<td>2,200 pounds/1,500 pounds</td>
<td>Red with white underbelly, feet, and head</td>
<td>• Superior maternal ability</td>
<td>A chemical in their blood make them heat and insect resistant.</td>
</tr>
<tr>
<td><strong>Beffmasters</strong></td>
<td>United States: Texas</td>
<td>2,600 pounds/1,700 pounds</td>
<td>Red</td>
<td>• High fertility and good maternal instincts</td>
<td>The cattle are heat, drought and insect resistant.</td>
</tr>
</tbody>
</table>
### Longhorn

**Benefits:**
- High quality of beef
- Large size
- High fertility
- Calm and easy to handle

**Origin:** South Africa

**Size:** Bull 2,000 pounds
**Color:** Red

**Adaptations:** Sub-Tropic Climate

### Bonsmara

**Benefits:**
- High quality of beef
- Large size
- High fertility
- Calm and easy to handle

**Origin:** South Africa

**Size:** Bull 2,000 pounds
**Color:** Red

**Adaptations:** Sub-Tropic Climate

---

**Longhorn**

**Bonsmara**
Cattle come in many sizes, shapes, and colors. Each cattle breed has different benefits and limitations that make it ideal for certain climates and ranches.

1) Which physical characteristics do the cattle have in common? (shape, hooves, coloring, etc...)

2) What did the cattle from tropical warm locations have in common?

3) Why do ranchers pay such close attention to the different inherited traits such as: structures, weight, and color?

4) What behaviors would a rancher prefer in their cattle herd? Explain your answer.

5) If you had to choose your favorite breed of cattle what would it be and why?
Security Briefing

with Hank the Cowdog

★ Ranching and Livestock ★

Chapter 9-12

Social Studies Activity

Topic: Heading to the Cattle Market

Standards Alignment: K.6C, 1.8B, 3.7C, 3.8A, 3.8B, 4.12A, 5.13B
Words of Wisdom from Hank

Security Tips from Hank:

One of the most important things to keep a ranch running is the buying and selling of cattle. It tickles me pink when we are able to sell our cattle at a good price (that means I get extra food). We spend all year making sure our cows are fed and safe during storms. The most important job on the ranch is to protect the cattle from those pesky coyotes— that is where I come in, you know, the Head of Ranch Security. All of this work is for nothing if we don’t make a profit at market. We need to make a pretty penny so we can buy our next set of cows to watch over in the next year.

Activity:

1) Each student or group of students needs a Cattle Market card.
2) Students will need to read their card and decide how many cattle they are going to buy based on their budget, geographic location, and available land.
3) Students may need to reference the breeding cards, or chapters 9-12 to complete this activity.

Use the budget guidelines below to complete your activity:
Each rancher has a loan from the bank for $50,000
Factors you need to consider when purchasing cows at market:

- Geographic location of your ranch
- Cost for feed per cattle and bull— the more cattle you buy, the more feed you will need
- Amount of acreage available for cattle

Created by Jenny Gaona
Hank the Cowdog: Ranching and Livestock Chapter 9-12- Cattle Market Activity
Hereford

Price
Bull 1,800 pounds- $250
Cow 1,200 pounds- $200

Angus

Price
Bull 1,870 pounds- $225
Cow 1,200 pounds- $190

Red Angus

Price
Bull 1,400 pounds- $200
Cow 1,100 pounds- $160

Brahmans

Price
Bull 2,000 pounds- $250
Cow 1,200 pounds- $200

Zebu

Price
Bull 440 pounds- $100
Cow 331 pounds- $75

Brangus

Price
Bulls 1,800 pounds- $250
Cows 1,000 pounds- $200
Each rancher has a loan from the bank for $50,000

Factors you need to consider when purchasing cows at market:

- Geographic location of your ranch- does your region have grass as a food source for your cattle
- Cost for feed per cattle and bull- the more cattle you buy, the more feed you will need
  - Feed costs $100-$200 per month depending on the amount of cattle you buy, how much they eat, and how much grass you grow on your ranch
- Amount of acreage available for cattle- 25 acres of grass for each cow
Heading to Market!

- You live in the Great Plains Region of Texas
- You have 10,000 acres

1. What breed of cattle are you going to buy?

2. How many bulls are you going to buy? What is the total cost of your bulls?

3. How many cows are you going to buy? What is the total cost of your cows?

4. How much of your budget are you going to set aside for feed? Explain.

5. What is your estimated profit for the year?

Heading to Market!

- You live in the Coastal Plains Region of Texas
- You have 15,000 acres

1. What breed of cattle are you going to buy?

2. How many bulls are you going to buy? What is the total cost of your bulls?

3. How many cows are you going to buy? What is the total cost of your cows?

4. How much of your budget are you going to set aside for feed? Explain.

5. What is your estimated profit for the year?
Heading to Market!

You live in the Mountains and Basins Region of Texas
You have 20,000 acres

1. What breed of cattle are you going to buy?

2. How many bulls are you going to buy? What is the total cost of your bulls?

3. How many cows are you going to buy? What is the total cost of your cows?

4. How much of your budget are you going to set aside for feed? Explain.

5. What is your estimated profit for the year?

Heading to Market!

You live in the North Central Plains Region of Texas
You have 15,000 acres

1. What breed of cattle are you going to buy?

2. How many bulls are you going to buy? What is the total cost of your bulls?

3. How many cows are you going to buy? What is the total cost of your cows?

4. How much of your budget are you going to set aside for feed? Explain.

5. What is your estimated profit for the year?
Heading to Market!

- You live in the Great Plains Region of Texas
- You have 15,000 acres

1. What breed of cattle are you going to buy?

2. How many bulls are you going to buy? What is the total cost of your bulls?

3. How many cows are you going to buy? What is the total cost of your cows?

4. How much of your budget are you going to set aside for feed? Explain.

5. What is your estimated profit for the year?

Heading to Market!

- You live in the Coastal Plains Region of Texas
- You have 20,000 acres

1. What breed of cattle are you going to buy?

2. How many bulls are you going to buy? What is the total cost of your bulls?

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Heading to Market!

• You live in the North Central Plains Region of Texas
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2. How many bulls are you going to buy? What is the total cost of your bulls?

3. How many cows are you going to buy? What is the total cost of your cows?

4. How much of your budget are you going to set aside for feed? Explain.

5. What is your estimated profit for the year?
The cattle market can make or break the life on a ranch. How is Sally Mae going to fix me all of my meals if we don’t make a profit at market? What if Loper gets sick and send some other cowboy to market and he buys the wrong cattle for our ranch? These choices can impact the most vital needs of a cattle ranch—what are you going to feed your cowdog?

1) What was the most difficult part of the cattle market?

2) What type of cattle did you buy? Why?

3) How much of your budget did you save to buy feed for your cattle? Why?

4) Did you stay under your budget, or did you go over? Explain.

5) Do you think you will make a profit at next year’s cattle market? Explain.
Security Briefing

with Hank the Cowdog

★ Ranching and Livestock ★

Chapter 7

Science Activity

Topic: Seasons

Standards Alignment: 4.8C
Words of Wisdom
From Hank

Security Tips from Hank:

You might have realized by now the ranch is a very busy place, but our jobs change according to the seasons. As the Head of Ranch Security, I take it upon myself to make sure everyone knows what season it is. I don’t have a calendar to tell me when the seasons change from fall to winter or spring to summer. I have to use clues to help me figure it out. This might seem like a big job and I am not going to tell you it is easy, but with my high intelligence I am able to keep it straight and help Loper keep up with his ranch chores. During this activity, you are going to be my Ranch Deputy and help me sniff out the clues in chapter 7 that help me figure out when a season is changing.

Science Part of the Activity:

1) While reading chapters 7 students will be recording clues or information in their Ranch Season Foldable. Each layer in the foldable will contain information for one season.
2) For each section of the chapter students will record the most important ranch job, vegetation changes, daylight patterns, and weather patterns for that season.
3) Also, while reading each chapter students will identify one problem that the Head of Ranch Security should be aware of when preparing for each season and record it on the back of the flap.
Foldable Pictures and Instructions:

Students will be recording information on their Ranch Season Foldable. To create the foldable fold four sheets of paper in half horizontally. Next, cut the pages down the middle on the fold line. Then, take the half sheets and layer them so that 1 cm is showing of each page. Tape or glue the pages in notebook. Finally, cut the layered pages in half to create a section on the left for science and a section on the right for social studies.

Front and Winter Information:

Spring Information:

Summer Information:

Created by Michelle Sedberry and Jenny Gaona
Hank the Cowdog: Ranching and Livestock Chapter 7 Ranch Seasons Foldable
### Fall Information:

- **Problems**
  - Rattlesnakes, hawks
  - Gopher quills
  - Cows might swallow bones

- **Ranch Activities**
  - Feed Run Oims

- **Vegetation**
  - Grass turns yellow
  - Leaves begin to fall off trees

- **Daylight Patterns**
  - Days start to get shorter
  - Nights start to get longer

- **Weather Patterns**
  - Cooler temperatures

---

**Problems**

- Feed runs have to be done every day
When you read about the seasons you noticed that the nonliving factors (weather and length of day) impact Ranch activities.

1) How did the length of the day impact ranch activities?

2) How did the weather impact ranch activities and the vegetation during each season?
   Winter:
   Spring:
   Summer:
   Fall:

3) What organisms are impacted by water on the ranch?

4) What scientific processes would be affected by lack of water?
Security Briefing

with Hank the Cowdog

★ Ranching and Livestock ★

Chapter 7

Science Activity

Topic: Organism Survival Throughout the Seasons

Standards Alignment: K.9AB, 1.9A, 2.9A, 2.10AB, 3.9A 4.9A, 5.9A
Words of Wisdom

from Hank

Security Tips from Hank:

Being the Head of Security is the most important job on the ranch, but Loper has to make sure all the animals on the ranch have their basic needs met (food to eat and water to drink). I guess that makes his job the second most important...anyways, you may not know, but a cow eats a lot of food every day! One cow will eat about 25 pounds of food and drink 30 gallons of water every day! That is 175 pounds of food and 210 gallons of water a week. Those numbers make me a little nervous because I never know if Loper will have enough money to get around to buying my dog food. I eat one bowl of dog food and have one bowl of water a day making my consumption a low priority on Loper and Sally May’s to-do list. Now where was I? Oh yes, cows need a lot of natural resources to survive the different seasons. This game is going to let you experience a year in the life of a cow.

Activity:

1) **Teacher Prep:** You will need to make the color coded game tokens according to the table provided. Each token represents a different item and nutritional value. The yellow cards represent winter grass and have a low nutritional value and game value of 1. Brown represents hay and has a nutritional value of 10-12% and has a game value of 2. Orange represents cottonseed cakes which have a nutritional value of 41% and a game value of 5. Blue cards will represent natural growing ranch grasses. These contain high nutritional value and have a game value of 5. The water tokens will all be blue, but the different water sources will have different values. The stream cards have a value of 5, the creek cards have a value of 10, and the pond has a value of 15. You will not explain the cards prior to

Created by Michelle Sedberry

Hank the Cowdog: Ranching and Livestock Chapter 7 A Year in the Life of a Cow
the game. Students should only be told that the cards represent natural resources on the ranch. Use the following table to make food tokens for the game. The number of tokens you will use each round will change. Use the tables provided in each section to preset each round while students calculate their totals.

<table>
<thead>
<tr>
<th>Color</th>
<th>Label</th>
<th>Represents</th>
<th>Number of Students in Class</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>10-15</td>
</tr>
<tr>
<td>Yellow</td>
<td>W-1</td>
<td>Winter Grass</td>
<td>45</td>
</tr>
<tr>
<td>Brown</td>
<td>H-2</td>
<td>Hay</td>
<td>25</td>
</tr>
<tr>
<td>Orange</td>
<td>C-5</td>
<td>Cottonseed Cakes</td>
<td>40</td>
</tr>
<tr>
<td>Green</td>
<td>G-10</td>
<td>Ranch Grasses</td>
<td>50</td>
</tr>
<tr>
<td>Blue</td>
<td>S-5</td>
<td>Stream</td>
<td>10</td>
</tr>
<tr>
<td>Blue</td>
<td>C-10</td>
<td>Creek</td>
<td>20</td>
</tr>
<tr>
<td>Blue</td>
<td>P-15</td>
<td>Pond</td>
<td>40</td>
</tr>
</tbody>
</table>

2) Mark your playing area (pasture) with cones or ribbon so students know where to find food and water tokens. Distribute the tokens in that playing area so that you are simulating real conditions. For example, the stream tokens should “flow” through the ranch. Pond tokens should be located together to form a pond. The winter grass and ranch grass should be distributed equally throughout the playing area. Hay is usually spread behind a stock trailer and will follow a path throughout the pasture, while cow cakes are typically put in one spot.

3) Students should have an envelope that represents their “stomach” and will hold their consumed items. Cows are grazers and move slowly in a pasture unless there is a predator. Students should move in slow motion to represent grazing. If a student runs or walks quickly they will use more energy than normal and the teacher should empty their envelope to simulate quick energy consumption.

4) The game will be played in multiple rounds. Each round will last 2 minutes. After each round students should return to a common area and tabulate their tokens for the round.
5) **Round One-Spring:**

**Spring Token Distribution:**

<table>
<thead>
<tr>
<th>Color</th>
<th>Label</th>
<th>Represents</th>
<th>Number of Students in Class</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>10-15</td>
</tr>
<tr>
<td>Yellow</td>
<td>W-1</td>
<td>Winter Grass</td>
<td>30</td>
</tr>
<tr>
<td>Brown</td>
<td>H-2</td>
<td>Hay</td>
<td>0</td>
</tr>
<tr>
<td>Orange</td>
<td>C-5</td>
<td>Cottonseed Cakes</td>
<td>0</td>
</tr>
<tr>
<td>Green</td>
<td>G-10</td>
<td>Prairie Grass</td>
<td>50</td>
</tr>
<tr>
<td>Blue</td>
<td>S-5</td>
<td>Stream</td>
<td>10</td>
</tr>
<tr>
<td>Blue</td>
<td>C-10</td>
<td>Creek</td>
<td>20</td>
</tr>
<tr>
<td>Blue</td>
<td>P-15</td>
<td>Pond</td>
<td>40</td>
</tr>
</tbody>
</table>

**Conditions:**
This round will represent spring conditions. The spring typically has abundant rain fall and there is a lot of plant growth. Hay and Cottonseed Cake tokens will not be used in this round.

**Limitations:**
This season is also when many cows will have calves. Select 2 or 3 students to have a calf during this round. The calf will not gather food tokens because they drink milk from their mother. The calf must hold hands or link arms with the mother during the round.

After students gather cards for 2 minutes they will return to the common area signaling the changing of seasons. At this time you will reveal what the cards represent and the value of the cards. Students should tabulate their cards using the form provided. If a student consumes 25 pounds of food and 30 gallons of water they survived the spring. The mother cows are producing milk for their young and must consume 50 pounds of food for the baby to survive.

Students will learn that some types of food are more nutritious and seek out those cards. This simulates the learned behaviors of the cows after the first year of life and the competition for resources. (Cows are intelligent, they learn quickly, and most breeds are very adaptable.)
6) **Round Two-Summer:**

**Summer Token Distribution:**

<table>
<thead>
<tr>
<th>Color</th>
<th>Label</th>
<th>Represents</th>
<th>Number of Students in Class</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>10-15</td>
</tr>
<tr>
<td>Yellow</td>
<td>W-1</td>
<td>Winter Grass</td>
<td>0</td>
</tr>
<tr>
<td>Brown</td>
<td>H-2</td>
<td>Hay</td>
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<tr>
<td>Orange</td>
<td>C-5</td>
<td>Cottonseed Cakes</td>
<td>0</td>
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<tr>
<td>Green</td>
<td>G-10</td>
<td>Prairie Grass</td>
<td>40</td>
</tr>
<tr>
<td>Blue</td>
<td>S-5</td>
<td>Stream</td>
<td></td>
</tr>
<tr>
<td>Blue</td>
<td>C-10</td>
<td>Creek</td>
<td></td>
</tr>
<tr>
<td>Blue</td>
<td>P-15</td>
<td>Pond</td>
<td></td>
</tr>
</tbody>
</table>

**Conditions:**

This round will represent the summer. During this season the water begins to dry up so there will be less water available. The yellow cards are removed because the dormant winter grass has been replaced with ranch grass. Hay and Cottonseed Cakes are not needed in the summer.

**Limitations:**

The summer season presents additional challenges for the cattle. During the summer months porcupines roam the pasture causing trouble for cattle who get to close and get quilled in the face. Select one student who will wear a blindfold during this round to represent a cow who was blinded by the quills of a porcupine. Another hazard during the warm months are rattle snakes. Unless a rattlesnake bites a cow in the face they can usually survive an attack because of their large size. Select a student to hop during the round to represent a rattle snake bite to the leg.

After 2 minutes have students come to the common gathering place and tabulate their food and water totals. If a student consumes 25 pounds of food and 30 gallons of water they survived the summer.

This round will teach students that cows must not only consume enough food and water to survive they must also be careful of wildlife in the pasture.
7) **Round Three-Fall:**

**Fall Token Distribution:**

<table>
<thead>
<tr>
<th>Color</th>
<th>Label</th>
<th>Represents</th>
<th>10-15</th>
<th>16-20</th>
<th>21-25</th>
<th>26-30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow</td>
<td>W-1</td>
<td>Winter Grass</td>
<td>25</td>
<td>30</td>
<td>40</td>
<td>45</td>
</tr>
<tr>
<td>Brown</td>
<td>H-2</td>
<td>Hay</td>
<td>25</td>
<td>30</td>
<td>40</td>
<td>45</td>
</tr>
<tr>
<td>Orange</td>
<td>C-5</td>
<td>Cottonseed Cakes</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>45</td>
</tr>
<tr>
<td>Green</td>
<td>G-10</td>
<td>Prairie Grass</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>45</td>
</tr>
<tr>
<td>Blue</td>
<td>S-5</td>
<td>Stream</td>
<td>10</td>
<td>13</td>
<td>15</td>
<td>17</td>
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<tr>
<td>Blue</td>
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<td>Creek</td>
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<td>25</td>
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<td>35</td>
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<td>Pond</td>
<td>40</td>
<td>50</td>
<td>60</td>
<td>70</td>
</tr>
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</table>

**Conditions:**
This round will represent the fall. During this season we see the return of rain and water is more abundant on the ranch. As the length of days and temperature decrease the producers become dormant. Feed runs will begin to supplement the nutrients needed by the cows. The playing area will now have Hay and Cottonseed Cake tokens added.

**Limitations:**
During the fall there is an increase of predator behavior because food supplies begin to diminish. Select one student to be a coyote during the round. The student must walk in the pasture and seek out a cow that is separated from the herd. Isolated cows can be tagged by removing their flags. Flags can be made of strips of felt and tucked into students’ clothing.

After 2 minutes have students come to the common gathering place and tabulate their food and water totals. Students should tabulate their cards using the form provided. If a student consumes 25 pounds of food and 30 gallons of water they survived the fall.

This round will teach students that predators in a pasture are very dangerous for cattle that do not stay with the herd.
8) **Round four- Winter:**

<table>
<thead>
<tr>
<th>Color</th>
<th>Label</th>
<th>Represents</th>
<th>Number of Students in Class</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>10-15</td>
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<tr>
<td>Yellow</td>
<td>W-1</td>
<td>Winter Grass</td>
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</tr>
<tr>
<td>Brown</td>
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<td>Hay</td>
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<tr>
<td>Orange</td>
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<td>Cottonseed Cakes</td>
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<td>Green</td>
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<td>Prairie Grass</td>
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</tr>
<tr>
<td>Blue</td>
<td>P-15</td>
<td>Pond</td>
<td>30</td>
</tr>
</tbody>
</table>

**Conditions:**
This round will represent winter. This season is the most difficult for cattle to survive. The cattle rely on the rancher for food supplements because winter grass is not nutritious enough for a cow to survive through the winter. If the weather prevents the rancher from moving around the pastures to feed the cattle they must go without food. Water supplies must also be kept available for the cattle in severe cold temperatures. During this round there is no prairie grass for the cattle to consume.

**Limitations:**
During the winter there is an increase of predator behavior because food supplies begin to diminish. Select three students to be coyotes during the round. The students must walk in the pasture and seek out a cow that is separated from the herd. Isolated cows can be tagged by removing their flags. Flags can be made of strips of felt and tucked into students’ clothing.

After 2 minutes have students come to the common gathering place and tabulate their food and water totals. Students should tabulate their cards using the form provided. If a student consumes 25 pounds of food and 30 gallons of water they survived the winter.

This round will teach students that as food decreases predators become most dangerous during the winter. Cattle that have white coloring are able to use camouflage to help protect them from predators during the snowy winter months.
## A Year in the Life of a Cow

### Calculation Form

<table>
<thead>
<tr>
<th>Seasons</th>
<th>Totals for Tokens</th>
<th>Survival</th>
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<td></td>
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<td>Water 30G</td>
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<td>Food Tokens</td>
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<td>Water Tokens</td>
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<td>Food Tokens</td>
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<td>Water Tokens</td>
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<tr>
<td>Water Tokens</td>
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<td>Round 4 Winter</td>
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<tr>
<td>Food Tokens</td>
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<td>Water Tokens</td>
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Use the blank space to work your math.
Created by Michelle Sedberry
Hank the Cowdog Ranching and Livestock Chapter 7 A Year in the Life of a Cow
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</table>

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Hank the Cowdog Ranching and Livestock Chapter 7 A Year in the Life of a Cow
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</tbody>
</table>

Created by Michelle Sedberry
Hank the Cowdog Ranching and Livestock Chapter 7 A Year in the Life of a Cow
A cow’s life is a hard and dangerous one. A rancher must make sure the cattle’s needs are taken care of every day of the year. Reflect back on your year as a cow and answer the questions below.

1) Based on your experience as a cow, which season did you find the hardest to survive and why?

2) Based on this game, what problems could have been solved by having a cowdog? How would the cowdog have solved those problems?

3) If a ranch experienced a drought, how would that affect all the wildlife on the ranch (cows and predators)? Would a drought affect the role of the rancher?

4) If you were a rancher, how would you solve the problem of predators and wildlife in your pasture?