Wolves and Farming
Livestock Depredation

National Science Content Standards:

Unifying Concepts and Processes
- Evidence, Models and Explanations

Life Science
- Regulation and behavior

Science in Personal and Social Perspective
- Natural hazards
- Risks and benefits

Vocabulary:
Depredation
Predator
Prey

Links:

Materials:
- game board
- game cards
- one die for each group of 4 -6 students
- Play money for each player or paper and pencil
- One game piece per player (Candy or paper pieces)

Introduction:
The purpose of this activity is for students to understand the potential problems of raising livestock, and the role of wolves in livestock depredation.

This activity should be used after playing *WolfQuest*.

Objectives:
At the end of this activity, the student will:
1. Understand that wolf predation on livestock is an issue with effects on both livestock owners and wolves.
2. Evaluate livestock management strategies
3. See how their actions affect wildlife.
4. List some problems of raising livestock near predators.

Procedure:
Game:
- Students will take the role of farmers raising cattle and sheep in an area with predators. Students will need to make decisions about managing their farms so that they can remain profitable.
- Each player will start with $5,000 (use play money and have one person be the banker, or have students keep track on their money on a piece of paper)
- For each round have the players roll one die and move their game piece the corresponding number of spaces. (Jolly Ranchers work great for game pieces!)
- To start the game, have each person roll the die and the highest number goes first and then in a clock wise rotation.
- The game is over once all the players have passed the livestock sale and have collected $2000 for the sale of their calves and lambs for the year. (The first to pass the sale can continue around the board, or may use the time to total their money.) At that time each player needs to add up the total money that they have.
- Each farmer must have at least $5000 to break even and to survive the following year.
  Alternative endings: the player with the most money wins
- Continue around the board more than one time

Procedure:

Set up:

Create enough game boards and game cards so you have one board and cards for every 4-6 students.

Hint: Copy the game cards onto different colored paper. (Facts on green, Management on white, and Predator problems on blue)

OR Label the backs of the cards by types. (F for Facts, M for Management, and P for Predator problems)

Game cards:

Landing on M (Management)

When a player lands on M, another player (to the left) picks up a card from the Management deck and reads the card to the player.

- Some cards ask a question regarding the purchase of material or help, depending on the decision the player needs to do what the card asks.
  - If money is needed, the player either gives the money to the bank or subtracts that amount from their total.
- Some cards directly tell the player what to do.

Landing on F (Facts)

When a player lands on F, another player (to the left) picks up a card from the Fact deck and reads the card to the player.
If the player gets the answer to the question correct, the player earns the money listed on the card. (Either from the bank or added to their total)

Landing on P (Predator Problems)

When a player lands on P, another player (to the left) picks up a card from the Predator Problem deck.

- Most cards cost the player money unless they have purchased some help to ward off predators. Players need to follow the instructions on the card.
- If the player has purchased a deterrent from predators, the player may "cash" in their card in place of doing what the predator problem card says.

This activity was adapted from Gray Wolf/Gray Matter, International Wolf Center

Game Cards: Management

Do you want to buy a guard dog to protect your livestock? Yes: Pay $500 Hold card for next predator problem No: Discard card to bottom of deck	Would you like to purchase electric fencing to protect your livestock? Yes: Pay $4000 Hold card for the next 2 predator problems No: Discard card to bottom of deck	You have a dead cow to dispose of. Do you: A. Bury or burn cow, pay $1,500 B. Dispose of at edge of farm, draw predator problem card
Will you graze your livestock on public land? Yes: Pay $500 for permits and draw predator card No: Pay $2000 in extra feed	Disease strikes your herd. Lose $1000 in lost livestock and medical fees	Drought causes hay shortages, your weaker livestock die. Lose $500
Property taxes are due Pay $500	Heavy summer storms wash out a bridge and down several trees. Lose next turn, cleaning up damage	Department of Agriculture reimburse you for livestock loss due to wolves Receive $300
Do you want to use flags tied to fences to help frighten wolves away? Yes: Pay $100 for materials, hold card, next predator problem reduced by 50% No: Discard card to bottom of deck	If, through management, you have used any form of deterrent against predators, receive $1000 in appreciation for your work protecting wolves	Do you agree to participate in research on non-lethal methods of deterrent? Biologists will research methods to keep wolves away. Yes: Roll die 1-3=it worked, save card for next predator problem 4-6=sorry, it didn't work, discard card
Do you want to hire more workers to guard livestock? Yes: Pay $1500, hold card for next two predator problems No: Discard card to bottom of deck	Do you want to try a low-cost method of protecting your cows? Drive around farm at night to deter wolves from approaching. Yes: Hold card for predator problem, but lose next turn due to loss of sleep No: discard card to bottom of deck	Rough winter kills livestock. Lose $2000

Game Cards: Predator Problems

A Coyote kills some sheep. Lose $500 for the loss of the sheep	Wolves kill a calf. Lose $300 for the loss of the calf	You notice wolf signs on the edge of your property. Pay $1000 for extra help patrolling your farm
Bear kill a cow and injures two more. Lose $1000 plus $250 in medical bills	Coyotes kill a calf. Lose $300 for the loss of the calf.	Feral (wild) dogs chase your cows, causing them to trample fencing. Pay $500 for repairs and lose your next turn while you make repairs
Four cows disappear overnight. Lose your next turn while you search for them.	Wolves kill the deer that have been eating your hay crop. Gain $500	You notice wolf signs on the edge of your property. Pay $1000 for extra help patrolling your farm.
Coyotes kill some sheep. Lose $500 for the loss of the sheep	Feral (wild) dogs chase your cows, causing them to trample fencing. Pay $500 for repairs and lose your next turn while you make repairs.	You notice wolf signs on the edge of your property. Pay $1000 for extra help patrolling your farm.

$1000 Q: What is the scientific name for a Wolf? A: *Canis lupus*	**$200** **Per correct answer** Q: What animals besides wolves kill livestock? A: Coyotes, foxes, mink, weasels, dogs, bears, etc.	**$500** Q: Describe how to tell the difference between a wolf and a coyote. A: Coyotes are smaller and have more pointed features	**$200** **Per correct answer** Q: Why do wolves howl? A: Communicate with pack, mark territory, excited, find lost wolf, etc.
$300 Q: Name a wild food source for wolves A: Deer, Moose, beaver, elk, caribou, bison, rabbit, etc.	**$500** Q: Name three colors wolves can be. A: Gray, brown, tan, black, white, etc.	**$200** **Per correct answer** Q: Name some wolf adaptations that make them good hunters A: Excellent sense of smell, eyesight, hearing, high intelligence, jaws, long legs, etc.	**$1000** Q: What is one problem with compensation to farmers for depredation? A: It may be difficult to verify
$1000 Q: What percentage of farms in wolf territory tend to experience wolf depredation? a. 2 percent b. 3-10 percent c. 45 percent A: a. 2 percent	**$1500** Q: Approximately how many wolves currently live Minnesota? A: about 2200	**$500** True or false Q: Is it common for wolves to kill people? A: False	**$500** Q: What organization supplies funds to pay when depredation occurs? A: Department of Agriculture
$500 Q: Way don't all wolves eat cattle? A: Prefer wild food, scared away, not hungry, not taught to hunt cattle, etc.	**$1000** Q: What are wolves? a. carnivores b. herbivores c. omnivores A: a. carnivores	**$500** Q: Name one folktale or story that involves a wolf? A: Little Red Riding Hood, The Three Little Pigs, Peter and the Wolf, etc.	**$500** Q: Which have killed more people in the U.S.? a. deer b. wolves c. bears A: Deer have killed more people in the woods and on the roads because of hunting and car accidents

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