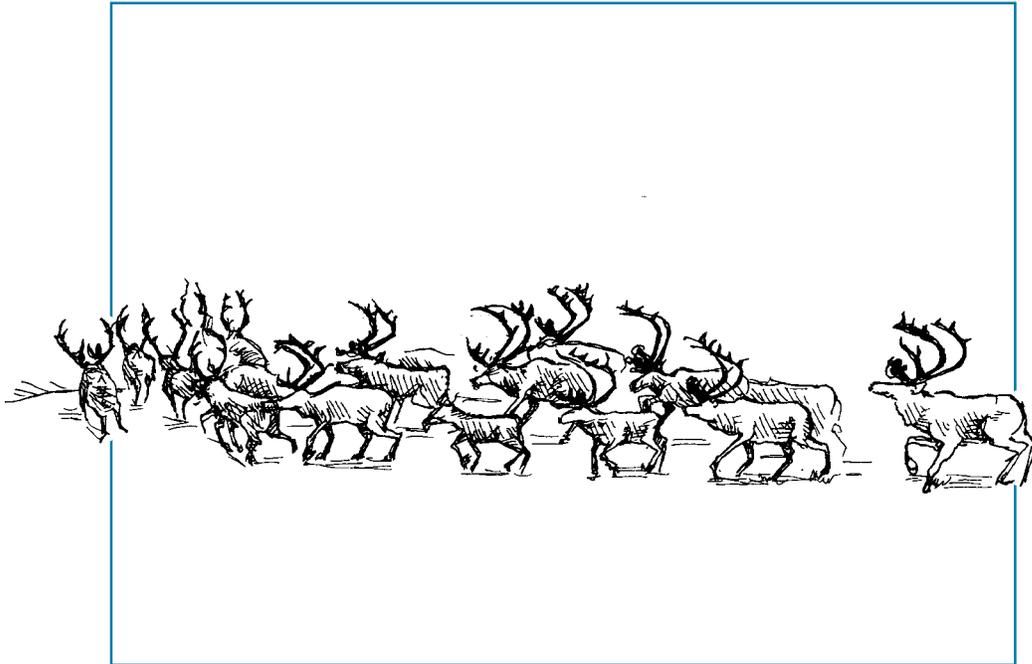


# Caribou Migration Game

## 2 AGE-VARIATIONS



### Section 3 TUNDRA ACTIVITIES

**Grade Level:** 4-6&7-12

**State Standards:** LA-3, LB-1, LC-3, LC-4, LC-5, SA-14, SA-15, GeoA-1, GeoC-3, AC E-2

**Subject:** Science, geography, art

**Skills:** Cooperation, reading, researching, drawing, brainstorming, speaking

**Duration:** Several sessions

**Group size:** Wholeclass or small groups

**Setting:** Indoors or outside

**Vocabulary:** Calf, calving ground, domestic, herd, home range, migration, mortality rate, predators, rut, tundra, wild

### Objective:

Students will describe the process of caribou migration as an adaptation for survival in their environment.

### Teaching Strategy:

Students study caribou migration, create a mural depicting the challenges caribou face during migration, and play a “Caribou Migration Game.” Older students create a caribou migration game and mural for younger students.

### Complementary Activities:

“Tundra Adaptations” and “Design Your Tundra Animal” in this section. “Tundra Writing Adventure” in Section 4, and “Harvesting Wildlife” in Section 5. Also “Graphic Populations” in *Alaska’s Wildlife for the Future*.

### Materials:

Alaska or regional maps, information on caribou in general and on a specific Alaska caribou herd, mural paper, art supplies.

### Background:

See **INSIGHTS Section 3: Tundra Adaptations: “Migration.”** See also *Alaska’s Wildlife for the Future, INSIGHTS, Populations.*

### Procedure:

#### PART ONE – Gr. 7-12

1. Introduce or review the concept of migration, using caribou as the example. Include the following information:

- Caribou travel across great distances throughout the year to find food, avoid insects and predators, and to **rut** and **calve** in favored areas.
- This travel, called “**migration**,” generally occurs in the same area from year to year.
- Caribou gather in large groups called **herds**.
- In Alaska, “caribou” are **wild** and “reindeer” are **domestic**. They are actually the same animal.
- During the yearly migrations, some caribou die. The ratio of deaths to live animals in a herd is the **mortality rate**.
- Calf **births** and **survival rates** are important factors in determining the population of a herd.



2. Look at a map of Alaska and brainstorm challenges that caribou may encounter during migration.

3. In class or as homework, students research general information on caribou and migration.

4. As a class, select one Alaska caribou herd to research in depth. Include population trends in student research.

5. Divide students into four groups, each to study and then illustrate spring, summer, fall, and winter challenges of the chosen herd.

6. Students create a large mural illustrating challenges, caribou behavior, and caribou life history during their assigned season.

7. Ask the students to predict what their chosen herd's population will do in the coming year.

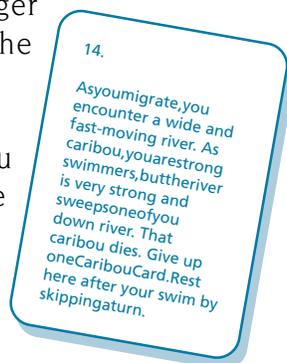
## PART TWO – Gr. 7-12

1. Using the mural they designed, students create a room-sized board game for younger students. They develop clear directions. A *sample of game board squares is provided below*.

Some considerations:

- The game should demonstrate to younger students that caribou, like many other tundra wildlife, migrate and encounter challenges on their yearly journeys.
- The game should start and stop in a circle, illustrating the migration cycle and importance of the **calving grounds**.
- Students may choose to create caribou mortality cards that the younger students hand in during the game when a caribou in their group dies. In this way, younger students may participate in the entire activity.

2. Students test their Caribou Migration Game and make modifications.



3. Students then present the activity and mural to a younger class. (*If this cannot be arranged, students can present the activity and game to a teacher who will use the activity with a younger class.*)

## VARIATION FOR YOUNGER STUDENTS (Gr. 4-6)

1. Introduce your students to caribou and caribou migration.

2. Have students look at maps that show the range of a local caribou herd. Point out river crossings, mountain passes, and other land challenges. Brainstorm what challenges caribou face as they travel throughout the seasons and their range.

3. Students create a mural depicting a one-year migration cycle.

4. Set up a game path around the room on the floor. Use the sample game cards (*following pages*), modifying them for a local caribou herd. Each student gets five "Caribou Cards" (see page 135).

5. To play the game, students move through the year, reading their steps aloud. If something is missing from their mural, have students add to the mural at a later date.

## Evaluation:

1. Students define migration.
2. Students explain the importance of migration for caribou survival.
3. Students identify several specific examples of challenges that caribou face during migration.
4. Students explain the connection between caribou behavior and the seasons.

## Curriculum Connections:

(See appendix for full citations)

### Books:

*Caribou Girl* (Murphy)

*A Caribou Journey* (Miller)

*Home at Last: a Song of Migration* (Sayre)

*Moose, Caribou and Musk Ox*  
(Alaska Geographic Society)

### Websites:

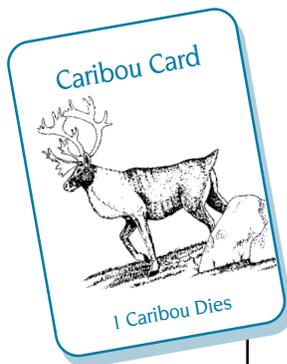
Alaska Department of Fish and Game  
<[www.state.ak.us/adfg](http://www.state.ak.us/adfg)> for information on Alaska's caribou herds, video of biologists at work, and *Alaska Wildlife Notebook Series*, "Caribou" fact sheet on line.

Arctic Animals Home <[tqjunior.advanced.org](http://tqjunior.advanced.org)>  
(Thinkquest)

Caribou Q&A's, maps <[arctic.fws.gov](http://arctic.fws.gov)>  
(Arctic National Wildlife Refuge)

### Teacher Resources:

(See appendix)



## Sample Caribou Migration Game Board

First group moves ahead one space, second group two spaces, etc. Students then follow directions on each card. If there are no directions, students move ahead one space at each turn.



1.

Starting line/Finish line.

Calving grounds in late spring (May and June)

2.

**Calves** are born! By the end of the day, you can outrun people and even wolves. **Cows** (female caribou) and calves stick together. At this time females have antlers, and males do not.

3.

Food is plentiful, you gain weight, doubling your size in only two weeks. Move ahead four spaces.

4.

Wolves, bears and eagles are **scarce**. Move ahead five spaces.

5.

Food is plentiful, eat and move ahead.

6.

Wolves, bears and eagles are **scarce**. Stay in the area one turn and graze on food.

7.

Wolves, bears and eagles are **scarce**. Stay in the area one turn and graze on food.

8.

Wolves, bears, and eagles are **scarce**. Move ahead.

9.

It's early summer now; mosquitoes are out. Begin migration toward summer range by moving two steps forward.



10.

Migration continues.  
Move ahead.

11.

Food is available as  
you migrate. Move  
ahead two spaces.

12.

Mosquitoes are really  
thick. Each of you  
loses a lot of blood  
and is weak.  
Skip on return.

13.

As you migrate, you  
encounter a river. As  
caribou, you are  
strong swimmers.  
Cross the river  
without difficulty.  
Move ahead two  
spaces.

14.

As you migrate, you  
encounter a wide and  
fast-moving river. As  
caribou, you are strong  
swimmers, but the river is  
very strong and sweeps  
one of you down river.  
That caribou dies. Give  
up one Caribou Card.  
Rest there after your swim  
by skipping a turn.

15.

Mosquitoes are really  
thick. You run wildly  
to escape the bugs.  
One of you loses too  
much blood and  
energy, falls, and is  
then killed by a  
brown bear. Give up  
one Caribou Card.  
Move ahead one  
space.

16.

As you migrate closer  
to the ocean, you  
encounter wolves.  
The wolf pack chases  
your group and kills  
one of you. Give up a  
caribou card. Move  
ahead 2 spaces.

17.

It has been three weeks  
since the birth of the  
calves. You have traveled  
far and are now in the  
summer range, in a very  
large group. Move for-  
ward one space, then  
another. Caribou are  
always on the move in  
search of food. The bugs  
are still thick.

18.

Female caribou  
begin to lose their  
antlers. They protect  
their calves by  
keeping close to  
other caribou.  
Caribou are safer in a  
group than alone.  
Move ahead.



19.

The bugs are really thick and bite you often. In an effort to escape the bugs, the herd runs wildly across the tundra. One of you breaks a leg and dies. Give up one Caribou Card.

20.

You find a patch of snow to rest on. It is cooler, and there are fewer bugs. Rest here two turns. Then move ahead one.

21.

The herd is very large now, and all of you eat as you migrate. The herd must keep moving to find food. Move forward.

22.

As you migrate closer to the ocean, you encounter wolves. The wolf pack chases your group, but you get away. One caribou calf breaks a leg and is killed by a golden eagle. Give up one Caribou Card. Move ahead.

23.

It is July, and the bugs are biting you all the time. Stand in a lake to cool off and avoid the bugs. Rest for one turn.

24.

It is late August, and antlers on male caribou are changing. The velvet is coming off. Your antlers are itchy all the time. You scrape your antlers on the ground and on bushes. Move forward.

25.

Fall has begun. It is early September, and males "go into rut," showing their strength. During the rut, one of you is injured and dies. Give up one Caribou Card. Move ahead.

26.

Fall has begun, it is early September, and males "go into rut," showing their strength. One of the male caribou wins a fight. Move ahead.

27.

Fall has begun, it is early September, and males "go into rut," showing their strength. After a long fight, one male caribou is exhausted and killed by a bear. Give up a caribou card. Move ahead.



28.

It is mating time; caribou mate. Move forward two spaces.

29.

As you migrate, eat lichen and blueberry bushes. Willow leaves are hard to find now. Move ahead.

30.

It is now late October, and the big **bulls** (males) **shed** or drop their antlers. Smaller bulls and females keep their antlers. Move forward.

31.

You hear a loud, sharp "boom" as a human hunter in search of food kills the caribou next to you. Give up one Caribou Card. Move forward.

32.

The winds blow colder, and the first snowstorm of the winter comes. Fall migration begins. Move forward two spaces.

33.

The rut is over, and males drop their antlers. Smaller bulls and females have antlers to help themselves protect and to keep food to themselves. Move ahead.

34.

You are now traveling as much as 50 miles a day. Keep eating lichen and berry bushes. Move forward two spaces.

35.

As you travel, your knees make a clicking sound. The wind blows and it is getting colder. Move ahead.

36.

As you migrate, you break up into smaller groups and spread out across the land in search of food. It is hard to find food. One of you dies of starvation. Give up one Caribou Card. Move forward.

