

Pika Tag

2 EXTENSIONS



Section 4 TUNDRA ACTIVITIES

Grade Level: 3 - 6

State Standards: 5.E.1, 8.E.1, 8.E.2

NGSS: MS-LS2-5., MS-LS2-2.

Subjects: Science, physical education

Skills: Role-playing, observing, planning strategy

Duration: 30 minutes

Group Size: Whole class

Setting: Outdoors or multi-purpose room

Vocabulary: Burrow, habitat, pika, predator, prey, scree

Objective:

Students will name at least one example of a predator-prey relationship in an alpine tundra environment.

Teaching Strategy:

During a game, students role-play a predator-prey relationship found in alpine tundra environments.

Materials:

Large playing area; vests or bandannas of different colors to identify pikas, 1 hawk, and 1 weasel; poker chips or other “food” tokens; timer; picture or description of a pika.

Background:

See *INSIGHTS Section 4, Ecosystems: “Food webs.”*
Also *Pika Natural History (below)*.

Pika Natural History:

(See also *Alaska Wildlife Notebook Series*.)

Pikas are small animals related to hares and rabbits. They live in **burrows** – tunnels dug between rocks on **scree** slopes in the alpine tundra.

Pikas gather grass every summer and dry it in the sun. Then they store the dried grass for winter food supply. Because pikas try to steal dried grass from piles made by other pikas, they constantly guard their own piles. A pika will chase away another pika “thief” that tries to steal from its pile.

Although several animals **prey** on pikas, principal **predators** are hawks and weasels. Pikas make a bleating cry, “Myaaa!” like a goat when they see a hawk, but they are silent and still when they see a weasel.

Procedure:

1. Explain that the class will play a game about pikas and their predators.
2. Simulate the scree slope **habitat** of pikas with 15 to 20 students joining hands and forming a large circle. Draw a line with chalk around the outside of this circle or mark it with a long rope. Inside the large circle, mark the burrow, an inner circle 3 to 5 feet (.9-1.5 meters) in diameter.
3. Outline a third circle on the floor away from the scree slope and burrow. This is the “predator’s lunch” area



where pikas go after they are “caught” by a predator.

4. Pick one student to be a hawk and one to be a weasel; tell the rest they are pikas.

5. Tell the students about pikas and their predators. Explain the students’ roles.

(a) *Pikas:* Each pika must leave its burrow to gather and dry food for the winter. Students move to the outer circle to pick up food tokens (*which the teacher scatters around the edge of the circle – the “large rocky slope”*).

Pikas can pick up *one* food token at a time and take it back to the outside edge of the burrow circle “to dry in the sun.”

When a pika has picked up and dried five food tokens, it can carry the food into the burrow and remain there, safe from the hawk. “Safe” pikas remain alert, looking for the weasel, and sit down whenever it appears.

Pikas are vulnerable to weasels in the open and in burrows, but they can escape by hiding or sitting down. Pikas must give an alarm call when they see a hawk, and all pikas run into their burrow (*the inner circle*) for safety.

Because hawks have sharp eyes, they can spot and capture a pika even if pika-student is sitting down, but the pika is safe in the burrow. When a weasel or a hawk catches a pika, the pika is out of that round and should wait in the “predator’s lunch” area.

Behavior review: Pikas pick up one food token at a time and return with it to the burrow “to dry in the sun.” After gathering five tokens, a pika sits safe from hawks (but not weasels) in the burrow. Pikas cry and walk to their burrow to escape the hawk. Pikas sit to escape the weasel.

(b) *Hawk:* The hawk player stays outside the outer circle until she sees a vulnerable pika. Then, the hawk goes inside the circle and tries to tag that pika or any other unwary one. The hawk may not go inside the burrow – a pika can escape

the hawk by running into the inner circle. After tagging a pika, the hawk walks around the outer circle once before re-entering to catch another pika.

(c) *Weasel:* The weasel player catches prey by being sneaky. It *quietly* sneaks into the pika colony, even into the burrow. A weasel can catch any unwary pika inside or outside the burrow, unless the pika sits down to hide before being tagged. After tagging a pika, the weasel must walk around the outer circle once before re-entering to catch another pika.

6. The game should be timed and end after 5 to 10 minutes. The winners are any pikas that stashed five food tokens and were not tagged by a predator. Play as many rounds as time allows.

**Pikas gather grass every summer
and dry it in the sun.
They store the dried grass
for winter food supply.**

VARIATIONS

A. After playing a couple of rounds, the group may modify game rules slightly to make the roles more equal. For example, the group could require the hawk to tag pikas with both hands instead of one,

thereby making the hawk’s task a little more challenging.

B. Pika players can steal food tokens from their neighbors’ grass piles. A pika can only take one food token at a time. If a pika is caught stealing a food token, it must return the food to its owner.

NOTE: The result of stealing is usually that fewer pikas escape predators. They spend too much time watching other pikas and fail to notice the weasel or hawk.

Evaluation:

Students name one or more animals from an alpine tundra environment and one or more of its predators.

EXTENSIONS:

A. **Design a bar graph.** Using the results of the game, design a bar graph to display how many pikas survived and how many food tokens were taken during each round of the game.

B. **Imagine a tundra without predators.** Describe what



might happen to the tundra environment if no predators existed. What would happen if the pikas' population crashed?

Curriculum Connections:

(See appendix for full citations)

Books:

Above the Treeline (Cooper)

Arctic Animals (Kalman)

Julie of the Wolves (George)

One Day on Pika's Peak (Hirshci)

Websites:

Pika and weasel fact sheets, Alaska Wildlife
Online <www.state.ak.us/adfg> (ADF)

Teacher Resources:

(See appendix)

