

Kumak's River

Text and illustrations © by Michael Bania
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SETTING: Geography and Science in the Arctic Regions of Northwest Alaska

Objective: To become familiar with the natural events during the seasonal breakup of frozen Arctic rivers and to learn how the local people react to frequent flooding in their villages.

Background information:

Iñupiat villages are situated near rivers or oceans. Each winter, the river and ocean ice becomes thick enough so people can walk or ride snowmobiles on it.

Kumak and his friends travel to other villages at this time. During late spring the sun remains in the sky longer each day, gaining up to seven or eight minutes of additional daylight a day. The land and ice begin warming. By the middle or the end of May, **breakup** begins. Often a loud crack can be heard as the ice breaks apart and soon the ice is moving downriver toward the sea.

Arctic villages are many miles up river so the ice will have 50 miles or more to travel. The rivers in the Arctic have many twists and turns so **ice jams** are common. **Ice** chunks get caught and start piling onto one another. Enormous pressure builds up followed by a rapid rise in water. There is not a lot of warning, and water and ice can quickly spill out of the **riverbanks** and start flooding into low-lying areas.

Luckily Kumak and his neighbors know that their river floods most years so they have built their houses on poles to be several feet above the ground. The yearly event has taught the people how high the water is likely to come so they are prepared. Fortunately most houses escape severe flood damage.

Dogs are quickly put into boats for safety and those living closest to the river often climb onto their rooftops to watch for **ice** that comes too close. The floating **ice** can be pushed away from houses by long poles or boards.

Some interesting facts:

- Scientists are trying to predict breakups by installing cameras along riverbanks.
- Watching the ice go out is a magnificent sight that can last many hours and days.
- The moving ice is so powerful that it can carve away riverbanks and trees.
- Each year there is an event near Fairbanks called the “Nenana Ice Classic.” People try to guess the exact time the ice will break up at a certain spot in the Tanana River in central Alaska. In 2012 the jackpot was \$350,000! (www.nenanaakiceclassic.com)

VOCABULARY

breakup
ice jam
ice
riverbank



VOCABULARY

point of view
tall tale
fiction
nonfiction
alliteration

STORY: Structure and Language

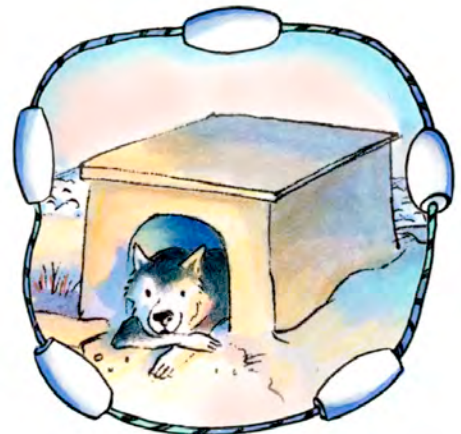
- Objective:*
- Identify the sequence of events, recognize the story within the story, and contrast the story from the **point of view** of the people and of the dogs.
 - Identify the two points of view found in *Kumak's River*.
 - Develop an awareness of the difference between **fiction** and **nonfiction** in this book.
 - Identify the types of words that describe how the water rose up and went down.
 - Become familiar with **alliteration** and write some examples of silly sentences.

Discussion Questions:

1. What is the main problem for the village people during breakup?
2. What do Kumak and his family do when the village starts to flood?
3. How does Kumak keep his dogs safe?
4. What does Kumak mean when he says: "As sure as seagulls return in spring, that river will come and visit us today"?
5. Where do you find the story of the dogs from their point of view?
6. Draw a picture that shows Kumak's family waiting for the flood waters to recede.
7. Describe some of the mischief caused by the river.
8. "A river does what a river does." Why does Kumak say this?
9. Is this story a tall tale or not?

WORDS DESCRIBING THE MOVING WATER

spilled out	swooshed away
flowed up	splashed by
inched	sloshed past
rose higher	swirled down
surging, climbing	slid down



SCIENCE IN THE NATURAL WORLD: Water and Ice: Friend or Enemy?

- Objective:*
- Identify water related natural disasters.
 - Map areas in the United States that are prone to flooding.
 - List the positive and negative aspects of water and ice.
 - Experiment with water and ice to explore their powers.
 - Determine if the city you live in experiences flooding or other natural disasters. Learn how your city prepares.



Discussion Questions:

1. What is a flood?
2. What is a flash flood?
3. How dangerous is a flood?
4. Determine the difference between a **flood warning** and a **flood watch**.
5. How can your family prepare for a flood? Discuss flood safety before, during, and after a flood.
6. Research how much water is needed for your car to float away. (www.weatherwizkids.com)
7. Explore the properties of water.
8. Use ice and other natural materials to model an ice jam.

VOCABULARY

flood

A flood results from days of heavy rain, melting ice or snow, when rivers rise and go out over their riverbanks.



FLOOD FACT:

Flash floods are the number one weather-related killer in the United States.



VOCABULARY

time line
estimate
analog
digital

STORY: Math and the Passage of Time

- Objectives:*
- Make a **time line** to show the chronological sequence of events in *Kumak's River*.
 - **Estimate** how much time would be needed to roll an oil drum in the mud, or untangle several fishing nets and net floats. Determine if the story time line is realistic.
 - Identify the parts of a clock and demonstrate proficiency in telling time. Distinguish between **digital** and **analog** clocks.
 - Use the correct words to describe the daily, monthly, and seasonal passage of time.
 - Make a class calendar to represent significant events such as birthdays. Or use a calendar to record weather data or other observable daily facts.
 - Research, on the internet, the number of minutes the sun shines each day in the month of May for Buckland, Alaska. Chart the daily increase and compare it to where you live.

Discussion Questions:

1. How did people tell time before the invention of clocks? Brainstorm ways people may have used natural events to signify an important time during the year, *i.e.*, when to plant crops, or when to move to a new location.
2. Kumak's children tell time by saying, "How many sleeps until my birthday?" What do you think this means?
3. The Iñupiaq language uses names for the months of the year that describe a natural, seasonal event, *i.e.* "month the snows melt" or "month robins return." What calendar names might you invent for the different months where you live?
4. The Iñupiaq language can be found on the internet: www.alaskool.org/language/dictionaries/Inupiaq
5. Historically the Iñupiaq people were nomads. They moved different times of the year to places where food and other resources were plentiful. They went to fish camp in the summer. Winter camp would be close to trees and easily caught animals for food. Why do you think the people had to live like this?
6. How did the dogs pass the time in their boat?

