

Bears in the Sky

Background

The constellations have been the sources of legends for thousands of years, almost as long as humans have been looking to the night skies. Ursa Major and Ursa Minor, the Latin names for “Great Bear” and “Lesser Bear,” are among the best known constellations. Also home to the groups of stars known as the Big Dipper and the Little Dipper, they are relatively bright and easy to find in the sky.

Finding the Great Bear isn’t hard. Summer is the best time to look, when these stars are higher in the sky. On a clear night, look north. You should see a huge dipper-shaped constellation. The bowl stars of the Big Dipper form the bear in Native American legend, while the stars in the handle are hunters chasing it. Alternatively, the “handle” is the tail of the bear and the “bowl” is part of the hindquarters.

If you look at the two stars forming the beginning of the “bowl” and follow along the line that they make, you will see the North Star, Polaris. The star forms part of the tail of the Lesser Bear, and was always used by sailors as a guide to finding north. In fact, the phrase, “getting your bearings” comes from the practice of using the Great Bear to find the North Star.

Procedure

1. Ask students if they have ever seen Ursa Major, the Great Bear, in the night sky. Have they ever looked for it?
2. Hand out the Night Sky worksheet and help students to locate Ursa Major and Ursa Minor. Do they look like bears to you? What do you see in these stars?
3. Tell students that people have been making up legends and myths about the constellations in the sky for thousands of years. Several different cultures saw bears in the Big Dipper and Little Dipper’s shape. Students will read two stories of how the Dippers came to be there.
4. Hand out the two legends for all students to read. After everyone has read the legends, lead a group discussion of their meaning.
 - What similarities do you see between these two stories?
 - What differences do you observe between them?
 - What do you think it was about the way these constellations appear that inspired these stories?
 - How do the two stories explain the characteristics of the constellations?
 - What did the people who wrote these stories think about bears? What characteristics did they assign to bears?
5. Have students return to their night sky worksheets and see what other animals or objects they can find in the stars. Be sure to tell them to use their imaginations and creativity. What can you see in the sky?



Summary

Students explore the night sky’s constellations and learn the use of bears in mythology and Native American lore.

Grade Level

3-8

Subjects

Science, writing

Skills

Description, analysis, observation, comparison

Learning Objectives

Students will be able to:

- Define a constellation
- Identify the Ursa Major and Ursa Minor constellations and explain their significance in mythology and Native American culture.
- Create their own mythological stories to explain constellations

Materials

- Night sky handout
- Copies of the two legends of Ursa Major/Minor

6. Invite your students to create their own legends about one of their own imaginary constellations. Students should write their own story about how that constellation came to be. Depending on your class time, this could be homework.
7. Have student volunteers share the layout of their constellation and read their stories to the other students and answer questions from the class.

Assessment

Encourage students to look for Ursa Major and Ursa Minor, or other constellations in the night sky above their homes with their families. Have students research and report on a legend about bears in other cultures.

Extension: Bears in Modern Culture

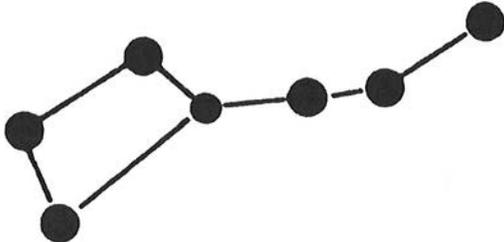
Procedure:

1. Explain to students that the constellations and the night sky played a major part in the lives of these ancient peoples, so they made up stories about them. Today we rely less on the stars. In fact, many people today barely even notice the stars. Yet even in our culture today, we refer to the bear in many different ways.
2. In small groups, have students brainstorm a list of bears in our culture—in advertising, toys and games, corporate identity, and so forth (e.g., Winnie the Pooh, Smokey the Bear, the Chicago Cubs, teddy bears, honey bears, Yogi Bear, bear hugs, gummy bears, Coca Cola polar bears, bear on the California State flag, “Goldilocks and the Three Bears,” and so on).
3. Next to each item on their lists, have students identify what characteristic of bears that item is trying to emphasize, or how the advertiser wants people to respond.
4. Have groups share their lists with each other.
5. If time allows, you may want to ask student groups to come up with their own creative advertising campaign using bear images. What are they trying to advertise? How will they use the image or reputation of the bear to sell their product?

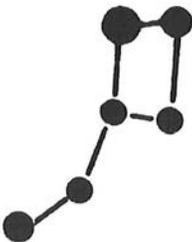
The Night Sky



Ursa Major



Ursa Minor



The Roman Legend of Ursa Major and Ursa Minor

Callisto was a young and beautiful nymph, who attracted many suitors. Thousands of years ago, the gods were known to often appear to mortals. Jupiter (Zeus in Greek mythology) was one such being. He was the king of the gods, and was well known for being unfaithful to his wife, Juno (Hera in Greek mythology).

So it came to pass that Jupiter took a liking to Callisto. He appeared to her and she had a child, whom she named Arcas. The birth of the child made Juno realize that her husband had been unfaithful to her, and in blind anger, she brought down divine wrath upon Callisto. She decreed that the woman should live as a bear, forever cursed to wander in the wild like an animal.

Callisto's hands twisted into massive paws, and her body grew a coat of fur. She grew large, and her face pressed into a shortened muzzle. The beautiful woman had become a great and terrible bear. Arcas was devastated at the disappearance of his mother, for he did not realize she had been cursed, and Juno made certain that he did not discover this.

For many years, Callisto wandered the forests and plains. She was terrified when night came, because she did not know how to be a bear. She had been a young nymph all of her life, and now the sounds and smells of the forest filled her with fear. Even the other bears and animals of the wood scared her. This was not the worst of her troubles, either, because she was a magnificent bear. Many hunters sought to capture her and to claim her hide.

Arcas grew up to be a powerful hunter. Many say he was the greatest hunter in the world. He spent many hours each day in the wilderness, hunting deer and other animals. It was only natural that he would decide that he should try to claim the prize of this great bear's hide. One day, while Arcas was hunting, he came upon the great bear. She was drinking water from a stream, and did not see him. Unaware that the animal was his mother, Arcas pulled out an arrow and waited for the best moment to fire.

If Arcas were to release that arrow, he would have slain his own mother. Jupiter, who normally paid little or no attention to his old lovers, took pity on the pair. Seeing that Arcas was about to shoot, Jupiter changed him instantly into a bear and hauled both of them into the sky by their tails. It is for this reason that both Ursa Major and Ursa Minor have long tails. Now, they are frozen there in space, Arcas the bear still holding his bow in his clumsy paws.

The punishment was not yet over, for Juno was still filled with anger. She sought out Oceanus and Tethys, the controllers of the sea, and made a request. She asked that the two bears never be allowed to sink below the sea and rest as the other inhabitants of the sky can.



The Iroquois Legend of the Three Braves

Long ago, the Great Bear wandered freely throughout the sky. His massive paws took him far across the unlimited ceiling of the world. He hunted and fished, finding food there in the many rivers of the sky. All throughout the first spring he did this, until his belly was full and he felt happy.

He did not know that three young braves had discovered him feeding that spring. They sought his pelt and meat to feed their families in the long winter that they knew was coming soon.

Without warning, the braves ran out after the bear, trying to catch and kill him. The Great Bear ran, trying to escape from the hunters. All through the long summer he ran, always trying to get away. The braves, however, were very cunning and strong. Eventually they caught up with him. In the first autumn, their arrows pierced the Great Bear and he died.

The blood of the bear spilled out of the sky and tinged all of the leaves with red and orange. The trees then dropped all of their leaves in mourning for their friend, the Great Bear.

The Great Bear was reborn the following spring, as is the way of bears, and the braves set out after him again. They do this each year. If you look into the sky and watch, you can see the three braves trailing behind the Great Bear as he runs toward the horizon, only to do it again and again with the coming of each spring.

