

## Cultural Standards

- **4.1.1: A-8**—Research and explain the significance of historical places and events in relation to various Native American cultures in Minnesota
- **4.1.2: A-8**—Demonstrate awareness that traditional stories (e.g., creation stories) express the uniqueness of each Native American culture
- **4.1.2: B-8**—Identify Native American teachings in various texts and media (e.g., play, movie, television program)
- **4.1.2: C-8**—Analyze characters and their actions in stories relating to Native American cultures
- **4.1.2: D-8**—Explain how Native American stories and legends enhance understanding of the past
- **4.1.2: E-8**—Give examples of art (e.g., literature, music) that expresses Native American teachings
- **4.1.2: F-8**—Describe traditional and contemporary values and beliefs of a Native American culture in Minnesota
- **4.3.1: D-8**—Demonstrate awareness that different cultures may have different interpretations of texts, cultural practices, and products

## MN State Standards

### 6th Grade:

- I can describe how characters, events and ideas develop and interact throughout a text. (6.4.3.3)
- I can support my thinking with evidence from the texts. (6.7.1.1, 6.7.4.4)
- I can use estimation and know if my answer makes sense. (6.1.3.5)

### 7th Grade:

- I can analyze how and why individuals, events, and ideas develop throughout a text. (7.4.3.3)
- I can determine how details are used to convey theme or central idea of a text. (7.4.2.2)
- I can solve multi-step problems involving proportional relationships and explain why my solution is reasonable. (7.1.2.5, 7.2.2.2)

### 8th Grade:

- I can compare and contrast the structure of two or more texts and analyze how the different structures lead to overall meaning. (8.4.5.5, 8.5.5.5)
- I can analyze how text makes connections to people, ideas, and life. (8.5.3.3)

# Plotting the Stars

Objective: Measurement and perspective

Integration: Social Studies, Language Arts

## Background Information

Sky stories of the Anishinabe are part of a complex system of spiritual beliefs. Knowledge of the stars is found in many aspects of culture including storytelling, symbolism and religious traditions.

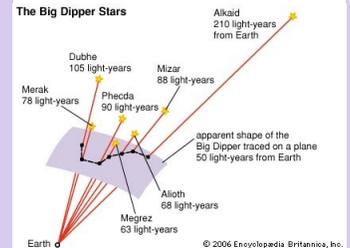
Some spiritual leaders have special knowledge of the stars and the planets. In ancient times, these indigenous astronomers used this knowledge to help guide the day-to-day affairs of their communities.

The Anishinabe have been given ways of communicating with the powerful heavenly forces. The oral teachings and stories which flow out of this communication between mortals and the spiritual world have been passed down from generation to generation since the beginning of time. For

example, one of the most powerful symbols for the life force is the Sun. The need for its presence for survival is stressed in the ancient story called "Snaring the Sun."

To this day, the stories of the Anishinabe of Central North America featured in this project are remembered and told by respected storytellers. With the coming of the first snow, families gather around their elders during the long winter evenings, and the time for storytelling begins. In the summertime, when the plants are awakened and the animals are roaming about, these stories are not told, as the plant and animal "beings" might hear and be offended. The storytellers speak of these things only in the winter when the spirits are resting.

In our Anishinabe culture, only



our "stargazers", some of whom are known as the Wabeno-innin, the "Morning star Men" or "The Men of the Dawn", are privileged to have a full knowledge of the Sky world. Much of their knowledge is sacred in nature and is used only under special circumstances associated with religious matters.

## Lesson

\*Adapted from *Three-Dimensional Orion* by Sally Stephens

How to find Ojig: Depending upon the season of the year, Ojig can be found high in the northern sky or low in the northern sky. Just remember the old saying spring up and fall down. On spring and summer evenings, Ojig shines highest in the sky. On autumn and winter evenings, Ojig lurks closest to the horizon.

\*See list of materials on other side

Tie string around each cotton ball (which represents a star), leaving at least 30 inches

of string trailing off from the cotton ball. Place diagram of Ojig on the piece of cardboard and tape it into place. Next, make holes in the cardboard with a pen or the top of a scissors for each star. Thread on string through the hole so that the cotton ball hangs down under the cardboard the same distance as the distance in light years that represents its distance to Earth (shown in parentheses behind the star names on the attached form). In this exercise, we will use a conversion of 1 inch being equal to 10 light years. Tape the string to the top of the cardboard so that the

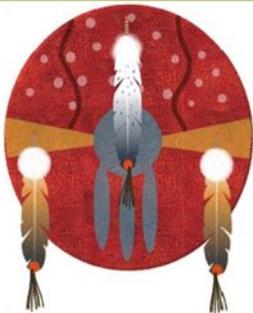
distance will not change. When all the stars have been put in their place in space, lay on your back on the floor, imagine looking up at the night sky and have a partner hold the cardboard above you so that the stars dangle toward you. You will see the stars of Ojig in their familiar pattern. As you get up and look at the stars from the side, you will see the positions of the stars in space relative to one another. Also, note that the stars only look like Ojig when viewed from our "perspective". Trade places with your partners.

### Materials:

- Access to Star Lab (optional)
- Piece of cardboard (8.5 by 11 inches)
- Ruler
- Cotton balls
- String or yarn
- Tape
- Scissors

### Vocabulary:

Aadizookaan  
Anung  
Asterism  
Big Dipper  
Constellation  
Dibaajimowin  
Maang  
Ojiig  
Pattern  
Perspective  
Three-Dimensional



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## Discussion Questions

1. The Earth orbits the sun, why doesn't the shape of Ojiig change at different times during our annual trip around the sun?
2. If the light we see as the most distant star at the tail of Ojiig is from 210 years ago, what was happening on Earth when that light left its source? What will be happening when the light leaving that star tonight actually reaches Earth?
3. This activity investigates perspectives regarding Ojiig. How can we use this learning to better understand other cultures?
4. Why are the cotton balls not the best representation of stars in this exercise?
5. How does understanding differences in perspective help us to become better relatives?

## Evaluation

Students should be able to explain how perspective influences what we see as reality (our truth).

## Enrichment Activities

1. Attached is the model for Maang (the Ojibwe version of the Little Dipper)
2. Research other names for the Fisher/Ojiig constellation.
3. What is this group of stars known as in other places in the world? (See attached)
4. Make a star clock to use the stars to tell time like our ancestors did (see attached for two versions).
5. Borrow the Animal Signs trunk from MPS
6. Invite a wildlife biologist into the classroom to learn more about fishers.
7. Invite storytellers from other cultures into your classroom.
8. Plan a storytelling evening for Family Night.
9. Make puppets of the *Fisher in Skyland* story and create a play to share with others.
10. Map where the various Big Dipper stories are told around the world.
11. Choose a star. Determine what year the light left that star in order to reach us at this moment. Research the time period to see what was happening in the place we live at that moment.