READING THE WIND

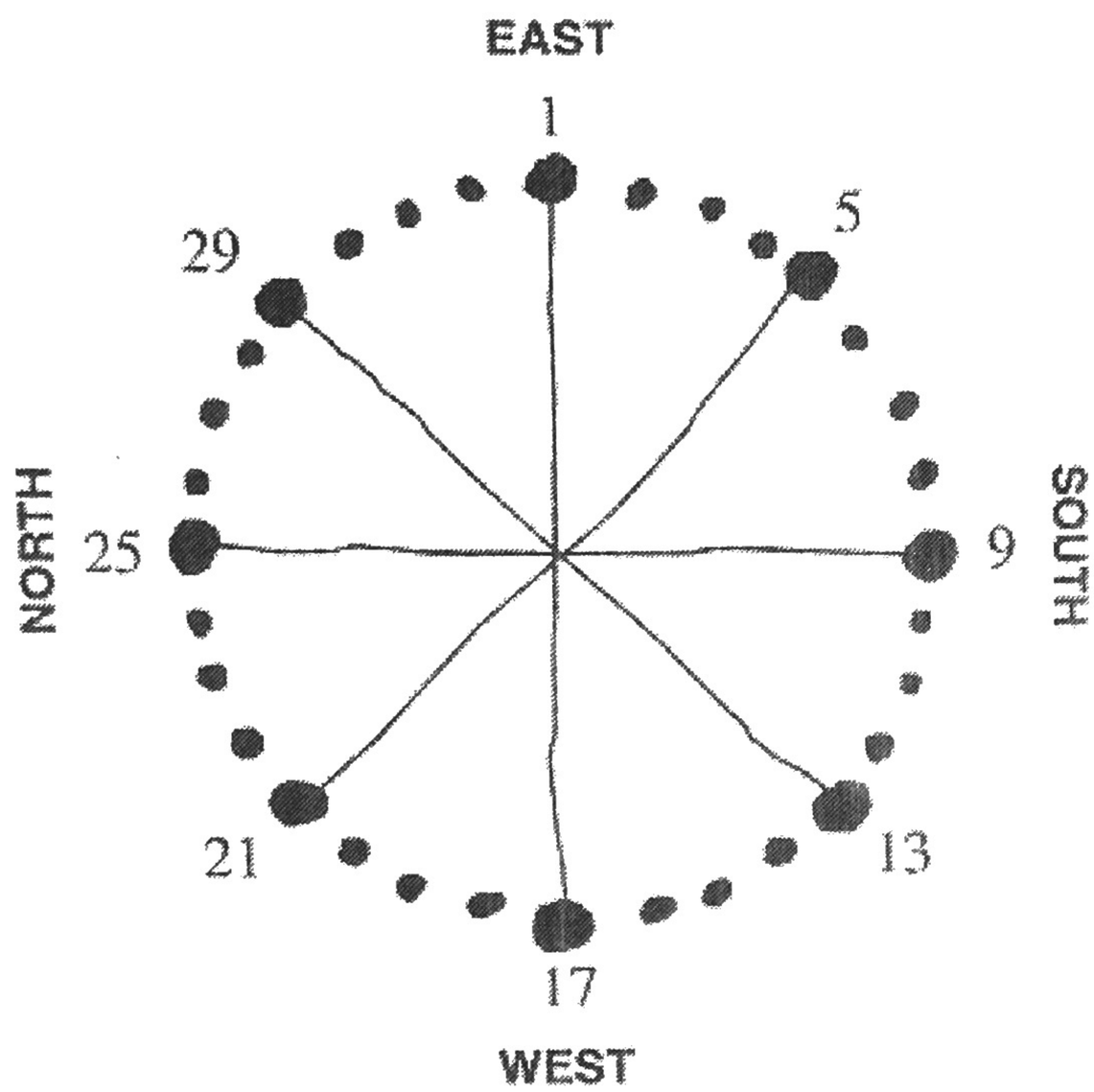
NAVIGATION AND THE ENVIRONMENT IN THE PACIFIC

A TEACHER'S GUIDE

An educational video about Polynesian and Micronesian voyaging produced by the Pacific Region Educational Laboratory.

PREL

Figure 6. Mau Piailug's Star Compass



1.	Weliwelil Fuese Magut	Polaris - the North Star
2.	Tan Mailapellifung	Little Dipper rising
3.	Tan Wule	Big Dipper rising
4.	Tan Egulig	Casseopia rising
5.	Tan Moen	Vega rising
6.	Tan Maragar	Pleiades rising
7.	Tan Ul	Taurus rising
8.	Tan Pahurfung	Beta Aquila rising
9.	Tan Mailap	Altair rising
10.	Tan Pahur	Gamma Aquila rising
11.	Tan Uliul	Orion rising
12.	Tan Sarapul	Corvus rising
13.	Tan Tumur	Antares rising
14.	Tan Mesaru	Scorpius rising
15.	Tahub	Southern Cross rising
16.	Machumaus	Southern Cross tipping on side
17.	Weliwelilub	Southern Cross due south
18.	Machumaleto	Southern Cross tipping on side
19.	Tubulub	Southern Cross setting
20	Tubul Mesaru	Scorpius setting
21.	Tubul Tumur	Antares setting
22.	Tubul Sarapul	Corvus setting
23.	Tubul Uliul	Orion setting
24.	Tubul Pahur	Gamma Aquila setting
25.	Tubul Mailap	Altair setting
26.	Tubul Pahur Fung	Beta Aquila setting
27.	Tubul Ul	Taurus setting
28.	Tubul Maragar	Pleiades setting
29.	Tubul Moen	Vega setting
30.	Tubul Egulig	Casseopia setting
31.	Tubul Woiu	Big Dipper setting
32.	Tubul Mailapellifung	Little Dipper setting

"Weather Lore Using Animal Behavior"

Introduction:

In the South Pacific, crabs have been observed to display unusual behavior that is related to changes in weather. This is a short activity in which students share what they may have noticed about animal behaviors associated with the weather.

Objectives:

- Students will share knowledge and stories from their own cultures and families related to navigation and the environment.
- Students will make a drawing from animal lore related to changes in the weather.

Materials:

Drawing paper
Crayons, pens, or pencils

Activity:

1. Teacher shares the following with the class:

   In some places in the South Pacific...
   - If a crab blocks the mouth of his hole and scratches sand down flat across the opening, wind and rain will come within three days.
   - If a crab flattens the pile of sand by his hole but doesn't block his hole, strong winds but no rain will come.
   - If a crab blocks the hole but leaves the sand piled around his hole, rain but not wind will come.
   - If a crab piles the excavated sand into a mound, good weather will come.
2. Ask students to share their knowledge of other animal behaviors related to weather.
3. Ask students to draw a particular animal behavior and have the other students guess what kind of weather is coming.

"Early American Weather Poems"

Introduction:

Early Americans used poems to remember environmental signs that were clues to changing weather conditions. In this lesson, students will share sayings or poems that their own families use to describe the weather then create their own.

Objectives:

- Students will create a saying or poem related to weather conditions.
- Students will explain the importance of understanding the environment.

Materials:

Paper and pencils or pens.

Activity:

1. Share the following poems with the students:

> "If smoke and birds go high
> There's no rain in the sky.
> If smoke and birds are low
> Watch out for a blow."
>
> "When white clouds cover the
> heavenly way
> No rain will mar your plans
> that day."
>
> "When moon or sun is in its
> house (halo around)
> Likely there will be rain without."

2. Ask students to share any poems or sayings that they may know.
3. Students then create their own poems or sayings individually or in pairs on an environmental clue of their choice. (They may use table 2 if they wish.)
4. Allow students to read their poems or sayings aloud to each other. Discuss the students' ideas and thoughts about why it is important to understand the environment.

Additional Activities:

1. If you have access to the Internet, you can receive daily cloud and weather information for the Pacific from the University of Hawai'i. This address will link you with weather information sources throughout the world including the Weathernet, Weather Underground, and Virtual Field Trip in Hawai'i. Students can compare their predictions to live satellite images of clouds over their region. These are especially impressive when hurricanes or typhoons are present. http://lumahai.soest.hawaii.edu

2. Contact local navigators and invite them to share their knowledge with the students. Explore and extend navigation lore in your home entity including types of canoes, navigation techniques, legends, stories, etc.

3. Ask the students to express what they have learned about navigation through art.

4. Create or draw a canoe that is unique to your own entity. Label the different parts of the canoe in your native language.

5. Using Table 5, find out the names of the common stars and constellations in your native language through interviews with local navigators and research.

6. In the video, Mau told his son about the importance of navigation in daily life. Discuss what he may have meant by this. Think about experiences or activities in life that require navigation. What parallels can be drawn?

7. Imagine that the class is on the crew of a voyaging canoe about to embark on a long journey to an unknown land. What skills do you need? What kinds of provisions would you take? Give reasons for your choices.

Summary

Understanding and interpreting the significance of changes in the appearance of stars, clouds, and the behavior of sea animals enables navigators to sail between the islands. To be a master navigator is more than simply interpreting the environmental changes. It is becoming part of the environment. It is making and repairing a canoe. It is assuming responsibility for the canoe and all who sail on it. It is becoming wise in the way of the seas. For a child to become a master navigator, he or she must make a lifelong commitment because it will take years of hard work and education to achieve this wisdom.

During the making of the video, Mau Piailug expressed a concern that children are not interested in becoming master navigators and that this important facet of Pacific cultures may be lost. It is hoped that the video will reach those specially gifted children who will make navigation a part of their life.

Navigation schools are being established in Yap and Hawai'i. The importance of keeping the great island traditions alive through navigation may be a catalyst for the establishment of more navigation schools throughout the Pacific. Children should be encouraged to seek out navigation teachers and learn to "read the wind".

Resources:

1. An Ocean in Mind, Will Kyselka, University of Hawai'i Press,1987.

2. Clouds: A Guide to the Sky is an attractive poster of cloud types and information on related weather conditions. It is available from the following: Sky Guide, P.O. Box 30027, Greenwood Station, Seattle, Washington 98103-0027, telephone 206-782-8485.

3. Prevailing Trade Winds, Weather and Climate in Hawai'i edited by Marie Sanderson, published by University of Hawai'i Press, 1993.

4. The Last Navigator, Stephen D. Thomas, Henry Holt and Company, 1987.

5. The Weather Book, an Easy-to-Understand Guide to the USA's Weather written by Jack Williams and published by USA Today - Vintage Books, a Division of Random House, Inc.

6. Voyages from the Past, Julie Stewart Williams, Kamehameha Schools/Bernice Pauahi Bishop Estate, 1989.

7. We, the Navigators - The Ancient Art of Landfinding in the Pacific, David Lewis, University of Hawai'i Press, 1994.

8. Weather at Sea, David Houghton and Fred Sanders, McGraw Hill Publishers, 1988.

Acknowledgments

This video was inspired by master navigator, Pius Mau Piailug, who worked with the production crew to create the program. He hoped that it would capture the interests of Pacific island children to carry on the traditions of Pacific islands navigation.

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