Fac

Facilitator- Noun- a person or thing that makes an action or process easy or easier.

Facilitate- Verb- make (an action or process) easy or easier.

Efface – Verb- to remove or make indistinct

Deface- Verb- spoil the surface or appearance of (something)

Fect
Fac
Fact
Fic
-fy

Fact

Artifact- Noun- an object made by a human being, typically an item of cultural or historical interest.

Benefactor- Noun- a person who gives money or other help to a person or cause.

Factors- Noun- a circumstance, fact, or influence that contributes to a result or outcome.

Malefactor- Noun- a person who commits a crime or some other wrong.

Fect

Affect- Verb- make a difference to.

Effect- Noun- a change that is a result or consequence of an action or other cause.

Perfectionist- Noun- a person who refuses to accept any standard short of perfection.

Infect- Verb- affect with a virus

Fic

Efficient- Adj- working in a well-organized and competent way.

Office- Noun- a service or kindness done for another person or group of people.

Insufficient- Adj- not enough; inadequate.

Deficiency- Noun- a failing or shortcoming.

-fy

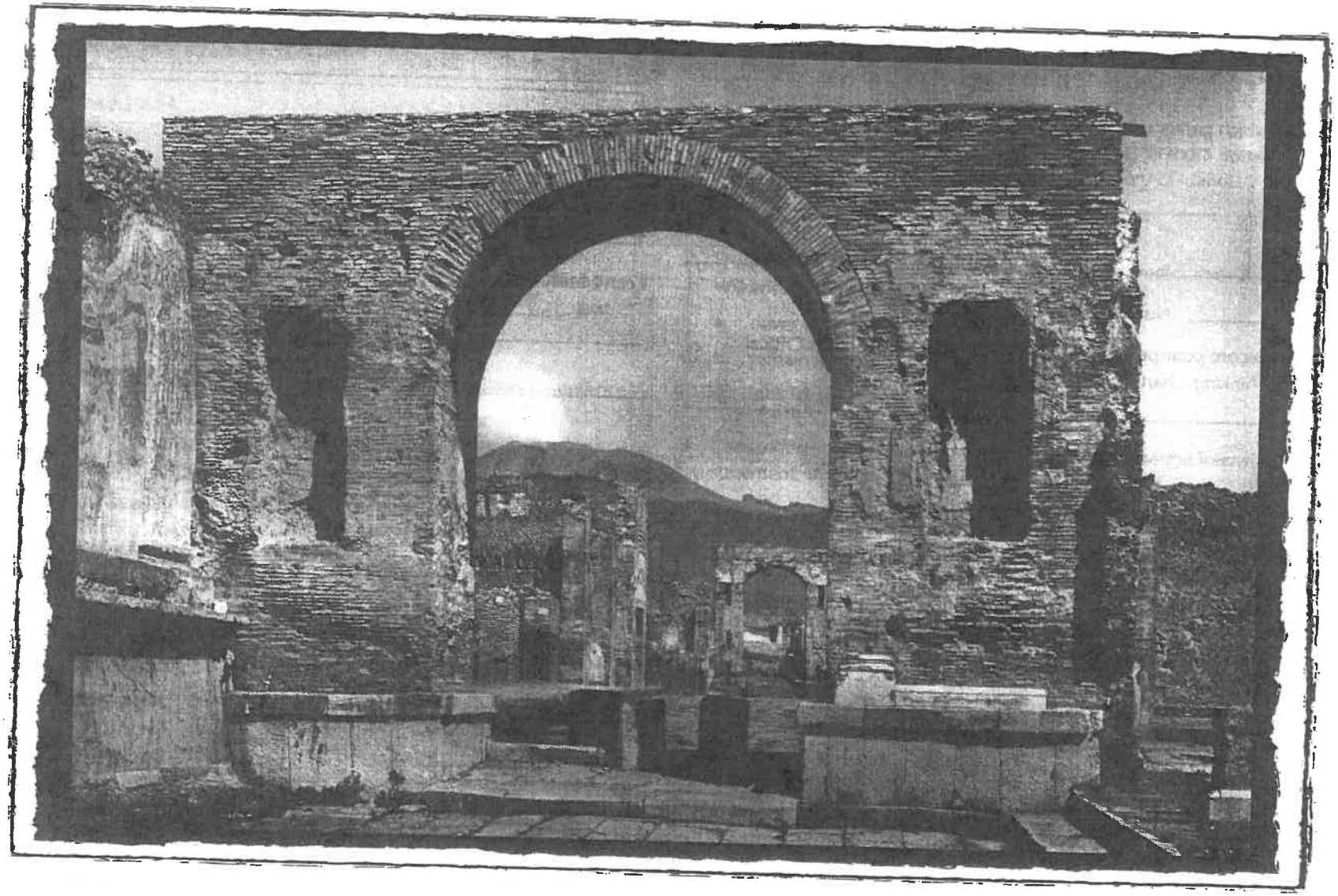
Pacify- Verb- To lessen the anger, agitation, or excitement of.

Simplify- Verb- make (something) simpler or easier to do or understand.

Disqualify- Verb- pronounce (someone) ineligible for an office, activity, or competition because of an offense or infringement.

Verify- Verb- make sure or demonstrate that (something) is true, accurate, or justified.

POMPEII
The City That Slept for 1,500 Years



In 1595 a worker digging a tunnel near Naples, Italy, stumbled on a buried town but did nothing about exploring it. More than a hundred years passed before historians identified the buried town. It was Pompeii, an ancient Roman city that had been destroyed and abandoned in A.D. 79.

2 No attempt was made to uncover Pompeii for another half century. Then, in 1748, a Spanish Army engineer became convinced that the city held vast treasure. He obtained permission from the king of Naples to begin excavating the buried city. The excavations turned up treasure of a kind that the engineer never dreamed of.

3 Pompeii had been built on the slope of Mount Vesuvius, an inactive volcano. In A.D. 79, however, Vesuvius became very active indeed. With almost no warning, there was a tremendous explosion inside the volcano.

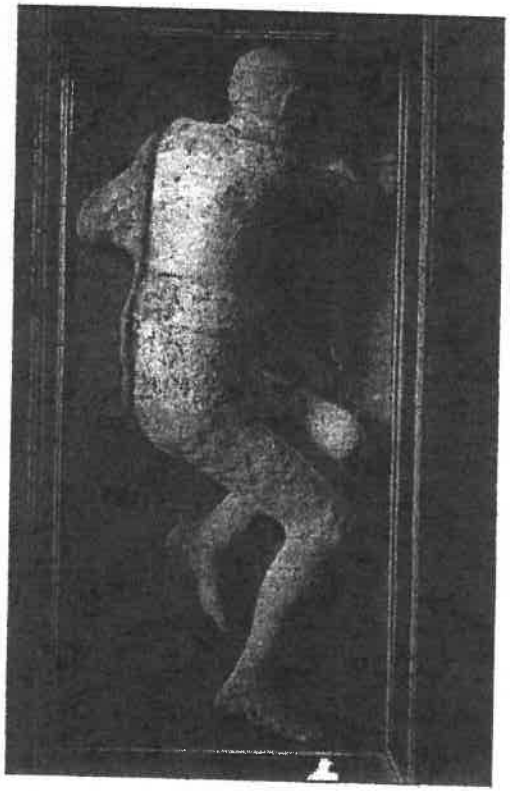
4 A black cloud shaped like a pine tree formed over Vesuvius. The cloud blotted out the sun. It was as if an eclipse had come to the area. The eruption lasted seven days. Ash, stone, and pieces of hardened lava spurted out of the volcano. On the seventh day, Vesuvius sent out gases that killed all living things within the volcano's reach.

5 The clouds of ash caused lightning storms and rain. Gradually, volcanic ash mixed with mud and rain to form a heavy paste. This paste covered the city to a depth of 12 to 50 feet. It formed a hermetically sealed layer, shutting off oxygen and preventing decay. Beneath the layer of hardened volcanic ash and mud, Pompeii lay in an unbelievably good state of preservation. It was as if the city had been frozen in place. In time, an outer layer of soil covered the layer of paste.

6 Nearly 2,000 years later, excavators uncovered paintings inside homes that were still bright, unfaded by time. Some of the food on tables and shelves was preserved. Loaves of bread were petrified in the ovens. Jugs still held drinkable wine. Figs, raisins, and chestnuts remained in recognizable condition. Olives preserved in oil were still edible.

7 But the most amazing preservations were the remains of many of Pompeii's citizens. The eruption of Mount Vesuvius had given off clouds of lethal gases. The carbon monoxide in the mixture of gases was odorless, but it was deadly. People

Mount Vesuvius is seen in the background through the ruins of the Arch of Nerone in Pompeii, Italy.



When the ash from Vesuvius covered Pompeii and mixed with mud from the rain that followed, many bodies were petrified and preserved for centuries. This photo shows the body of a petrified man.

who hadn't fled from the city died where they stood. Like their possessions, their bodies were covered and preserved by the volcanic ash and mud.

8 Hundreds of years after Vesuvius's eruption, excavators found the petrified body of a Roman soldier. The soldier was fully armed and standing erect. He was found at a guard post in a niche in the city wall. He had remained at his post even though a rain of ash and small stones fell from the sky.

9 The bodies of gladiators who were slain that day are preserved in the volcanic paste. Inside excavated temples, the petrified bodies of priests can be seen. They appear as if frozen while performing their duties.

10 In one home, the diggers found the stonelike remains of a man standing upright. He holds a sword in his hand, and one foot rests on a heap of gold and silver. He seems to have been protecting his wealth from looters. Near him are the bodies of five other men he struck down before he himself was killed by Vesuvius's deadly gases. The volcanic ash preserved the looters and the guardian alike.

11 About 5,000 Pompeians managed to escape the doomed city, and many more tried unsuccessfully to escape. Many tied pillows over their heads for protection against the falling stones and lava, and fled. People who left the city early enough reached the nearby Mediterranean Sea. From its shore they were able to escape in boats. Those who waited too long, however, found that wild tides had swept away the docks and boats, leaving them stranded. Others were struck down before they reached the water.

12 Not all the people in boats were trying to get away from Pompeii. Pliny the Elder was a famous writer as well as commander of the Roman fleet. He was about 200 miles from Pompeii when he heard of the volcanic cloud hanging above Vesuvius. Pliny decided to investigate. He headed for Pompeii with some of his warships. As the ships approached Vesuvius, pieces of burning rock fell on the decks of the vessels. Pliny and his crew landed. They survived the falling rocks for a day, only to be killed by poisonous gas.

13 More than 15,000 of Pompeii's 20,000 people perished. The petrified remains of about 700 Pompeians can be seen today. Their bodies are on display in the 160,000-acre section of the city that has been excavated.

14 When Pompeii was a living city, it attracted thousands of visitors. Today, the restored city attracts millions of people from all over the world. They marvel at Pompeii's preserved wonders, and for a few hours, they step back 2,000 years to the days when Roman citizens walked the city's streets and lived in its houses.

If you have been timed while reading this article, enter your reading time below. Then turn to the Words-per-Minute Table on page 71 and look up your reading speed (words per minute). Enter your reading speed on the graph on page 72.

Reading Time: Lesson 4

_____ _____

Minutes *Seconds*

Name: _____

Pompeii: The Last Day
Video Worksheet

1. What were the first signs that Mt. Vesuvius was going to erupt?
   a. massive earthquakes
   b. thunder storms

   c. minor earth tremors
   d. flooding

2. What did the inscription on the wall call the gladiator?
   a. a heart throb
   b. a mean man
   c. the greatest gladiator ever
   d. ugly

3. Stefanas' business cleaned clothes in:

   a. grape juice
   b. water
   c. human urine
   d. wine

4. What did the slave girl's bracelet say?
   a. "happy anniversary"
   b. "will you marry me"
   c. "a gift from a friend"
   d. "from the master to his slave girl"

5. At first, what happened when the volcano erupted?
   a. lava rushed down the volcano
   b. a column of smoke and ash went straight up
   c. nothing
   d. an earthquake swallowed the entire city

6. Pliny the Elder was a military commander, but his real passion was?

a. studying nature
b. playing soccer
c. horseback riding
d. writing books

7. What happened when the cloud of ash cooled in the air?
a. it disappeared
b. it let off a toxic gas
c. it hardened into pumas stone and hard rock
d. it became a liquid

8. Why did some slaves stay in Pompeii?
a. if they were caught leaving their masters they could be killed
b. they thought dying was better than being a slave
c. they thought it was the end of the world
d. they did not want to escape to the water because they could not swim

9. What did Gaius do when Pliny asked him to come with him to Pompeii?
a. he agreed
b. he started crying
c. he said he would stay to finish his work
d. he said "you are not the boss of me" and ran into his room

10. Why did many of the houses in Pompeii collapse?
a. because of the earthquakes
b. the rocks landing on the houses were too heavy
c. the houses were built badly
d. the houses caught on fire

11. What god does Polybius pray to?
a. Neptune
b. Saturn
c. Caesar Augustus
d. Jupiter

12. On his way to Pompeii, Pliny the Elder passed by this city that needed his help:
a. Herculaneum
b. Rome
c. Naples
d. Crete

13. What did Polybius' slaves do when he set them free?
a. they ran for their lives

13. What did Polybius' slaves do when he set them free?
    a. they ran for their lives
    b. they said thank you and left
    c. they said thank you and stayed
    d. they did a dance

14. Instead of being nervous about the dangers of the earthquake, Pliny decides to:
    a. take a bath
    b. watch some TV
    c. read a book
    d. go fishing

15. What happened to the column of smoke and ash from the volcano?
    a. it disappeared
    b. it turned into lava
    c. it fell and started going on the ground towards the city
    d. it turned into rain

NAMES: Answer Key DATE: PER:

Exploring Artifacts with Moana

AFTER HER GRANDMOTHER SHOWS HER A HIDDEN **ARTIFACT**

DEFINITION

an object made by a human being, typically an item of cultural or historical interest.

WHAT DOES MOANA LEARN ABOUT HER PEOPLE'S:

CULTURE	GEOGRAPHY	TRAVEL
LANGUAGE	ART	CHALLENGES
ACCOMPLISHMENTS	SOCIAL STRUCTURE	FUTURE

Answers will vary and amaze you!

WHAT DOES MOANA CONCLUDE AFTER STUDYING THIS ARTIFACT?

"We were voyagers!"

WHAT IS THE EFFECT ON MOANA AFTER SHE LEARNS MORE ABOUT HER PEOPLE?

This will be so great to hear from your students!

"Moana" sheds light on navigational skills of the Polynesian people

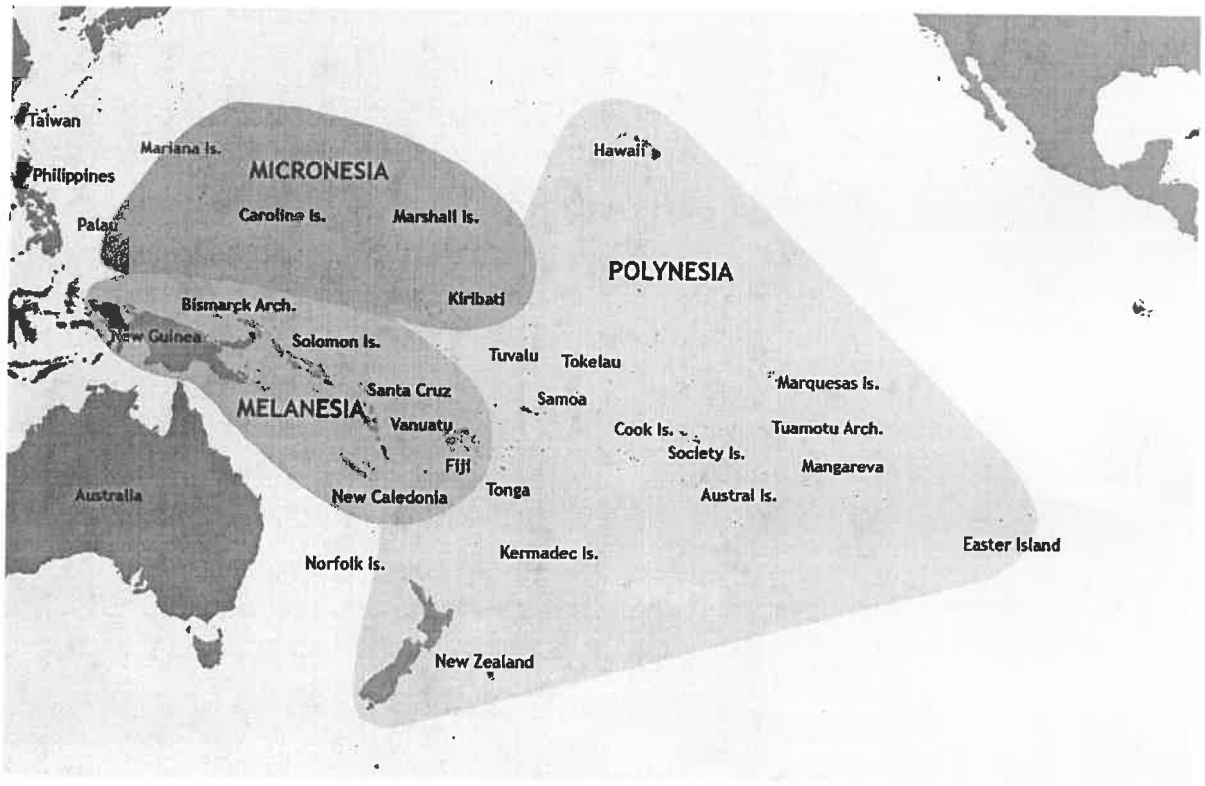
By The Conversation, adapted by Newsela staff on 08.31.17
Word Count **750**
Level **960L**

Moana Waialiki uses traditional celestial techniques to navigate across the sea. Photo from Flickr.

One of the greatest feats of human migration in history was the colonization of the vast Pacific Ocean 3,500 years ago. It was accomplished by people from a group of islands called Polynesia. They achieved it thanks to their sophisticated knowledge of the stars and navigation.

The Disney film "Moana" has drawn attention to these accomplishments. The movie has helped inform a new generation about the complexity of how Indigenous people understood the stars.

Polynesia forms a triangle across the Pacific, with Hawaii to the north, Rapa Nui (Easter Island) to the southeast and Aotearoa (New Zealand) to the southwest. Tahiti is in the center. But Polynesian voyaging extends beyond this triangle. There is strong evidence they reached the coast of South America and islands near Antarctica.



"Moana" shows how Polynesians traveled. The main character uses traditional methods to navigate across the sea.

Mapping The Stars

During production, Disney created the Oceanic Story Trust, a group of experts. They were there to make sure the film was correct about Polynesian culture.

To navigate the huge Pacific Ocean, Polynesian voyagers needed to map the stars to determine their position. Nainoa Thompson is the president of the Navigator and Polynesian Voyaging Society. He explains, "If you can identify the stars as they rise and set, and if you have memorized where they rise and set, you can find your direction."

So what are some of these navigational methods?

To calculate their position on Earth, Polynesian voyagers memorized maps of the stars. They also used the angle of stars above the horizon to determine their position. For example, the top and bottom stars of the Southern Cross, a group of stars, are separated by 6 degrees.

When the distance between those stars is equal to the bottom star's distance from the horizon, you are as far north as Honolulu, Hawaii. When the bright stars Sirius and Pollux set at exactly the same time, you are as far south as Tahiti.

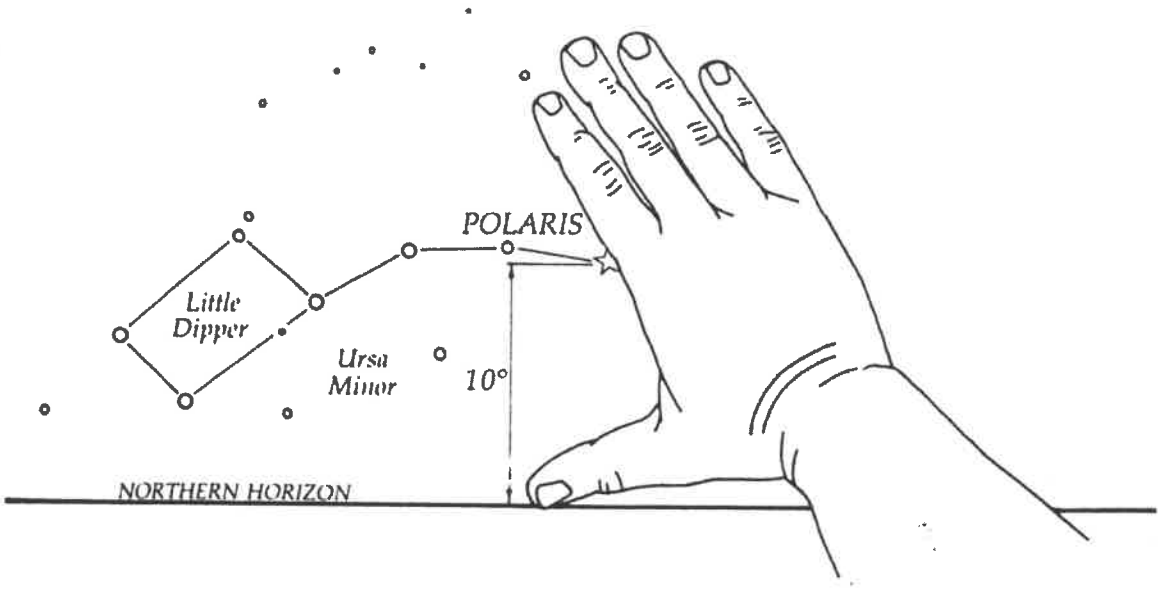
Fingers Make Good Measuring Tools

Voyagers measure the angles between stars and the horizon using their hands. The width of your pinkie finger at arm's length is roughly 1 degree.

Hold your hand with the palm facing outward and thumb fully extended, touching the horizon. Each part of your hand is used to measure a particular height.

In Hawaii, the "North Star" is called Hokupa'a, meaning "fixed star." It lies close to the north pole. The height of Hokupa'a shows how far north you are.

In the film, we see Moana Waialiki using this method to measure the height of a group of stars. Look closely and you can see that she's measuring the stars in Orion's Belt. The position of Moana's hand shows the star above her index finger has a height of 21 degrees. Given that the movie takes place about 2,000 years ago near Samoa, the position of Orion shows they are traveling exactly due east.



Later in the film, we see Moana navigating by following Maui's fish hook. In the various Polynesian traditions, the hook was used to pull islands from the sea. It is represented by the star group Scorpius, which rises at dusk in mid-May. This shows they are traveling southeast.

Stars Shift Slowly

The positions of the stars move over time. Polynesians have been exploring the Pacific for more than 3,500 years. The stars have slowly shifted in that time.

From Samoa, the Southern Cross has lowered from a 60 degree height 3,500 years ago to 41 degrees today. Those navigating by the stars must slowly adjust their measurements.

When European colonists arrived in Australia, they knew little about how the Aboriginal people who lived there traveled around. Aboriginal people were in Australia thousands of years before Europeans arrived. Some researchers claim Aboriginal people did not use the stars at all. However, projects with Aboriginal elders show that Aboriginal people developed star maps to link the sky with the land to create trade routes across Australia.

Indigenous people around the world depended on the stars for knowing where to travel. Try going out tonight and measuring the positions of the stars with your own hands. It's actually quite fun!

Duane W. Hamacher is a professor of astronomy at Monash University in Australia.

Carla Bento Guedes is a professor of astronomy at the University of New South Wales in Australia.

Answer Key

1 Which paragraph in the section "Mapping The Stars" supports the conclusion that detailed knowledge of stars and accurate measurement were key to the voyagers' system of ocean navigation?

Paragraph 8:
To calculate their position on Earth, Polynesian voyagers memorized maps of the stars. They also used the angle of stars above the horizon to determine their position. For example, the top and bottom stars of the Southern Cross, a group of stars, are separated by 6 degrees.

2 Read the inference below.

The movie "Moana" accurately represented Polynesian navigational skills because producers collaborated with experts.

Which sentence from the article provides the BEST support to the statement above?

(A) The Disney film "Moana" has drawn attention to these accomplishments.

(B) The main character uses traditional methods to navigate across the sea.

(C) They were there to make sure the film was correct about Polynesian culture.

(D) Later in the film, we see Moana navigating by following Maui's fish hook.

3 Which selection from the article is BEST illustrated by the map in the introduction [paragraphs 1-4]?

(A) One of the greatest feats of human migration in history was the colonization of the vast Pacific Ocean 3,500 years ago.

(B) "Moana" shows how Polynesians traveled. The main character uses traditional methods to navigate across the sea.

(C) To navigate the huge Pacific Ocean, Polynesian voyagers needed to map the stars to determine their position.

(D) When the distance between those stars is equal to the bottom star's distance from the horizon, you are as far north as Honolulu, Hawaii.

4 How does the image and text in the section "Fingers Make Good Measuring Tools" develop a coherent understanding of the measuring stars?

(A) Both the text and the image give explanations of how the Polynesian voyagers learned how to measure stars from their ancestors.

(B) The text give details on the stars that are most important to measure and the image shows that the North Star is the most helpful for locating Hawaii.

(C) The text explains the steps to take to locate important groups of stars and the image illustrates how you can use these stars to find your location.

(D) The text describes how to measure the height of stars to figure out your location and the image provides a visual example of someone using this method.