

# Aristotle Leads the Way

## Theme

“It is impossible for a man to begin to learn that which he thinks that he knows.”

Epictetus (ca. 55 – ca. 135 C.E.)

## What ?

**quest** – a journey in search of something, knowledge or a prize or treasure

## When?

**B.C.E.** – before the common era

**C.E.** – the common era



*“Welcome to the world’s first science laboratory.”*



“It is impossible for a man to begin to learn that which he thinks that he knows.”

**Scientists Speak**

Epictetus (ca. 55 – ca. 135 C.E.)

# “Birthing a Universe” and “Telling It Like They Thought It Was: Myths of Creation”

## Theme

“In the beginning, God created the heaven and the earth.”

Genesis

“Some foolish men declare that a Creator made the world....Know that the world is uncreated, as time itself is, without beginning and end.”

The Mahabharata

## What ?

**millennia** – periods of a thousand years each; a millennium is a thousand years

**astrology** – a false science based on the idea that the stars influence human events

**astronomy** – the study of the universe and heavenly bodies beyond the Earth’s atmosphere

**astronomer** – one who studies heavenly bodies

**constellation** – a recognizable group of stars to which ancient people gave a name

**void** – empty

**geometry** – the branch of math that deals with shapes, space, and measuring

**observation** – something that can be seen with the five senses

**hypothesis** – a possible and reasonable explanation for a set of observations or facts



*“Do you think you could do the dry land next?”*

**theory** – a well-tested explanation of observations or facts

**fact** - information tested and shown to be accurate by competent observers of the same event or phenomenon

## Where?

**Sumer** – an ancient Middle Eastern country (present-day Iraq)

**Egypt** – ancient country in northwest Africa that still exists today

**Mesopotamia** – ancient land between the Tigris and Euphrates Rivers on the west coast of the Mediterranean Sea (present-day Iraq, Lebanon, and Syria)

## QUEST SHEET

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### How it All Began

#### Hebrew Creation Story

The creator is called \_\_\_\_\_

The earth is described as

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Two actions that the creator took include

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#### Chinese Creation Story

The creators are called \_\_\_\_\_

Together their names mean \_\_\_\_\_

All that existed at the beginning was \_\_\_\_\_

What did the creators use to create life? \_\_\_\_\_

Describe how life began.

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## QUEST SHEET

### Greek Creation Story

What existed at first? \_\_\_\_\_

The creator is called \_\_\_\_\_

The creator brought \_\_\_\_\_

\_\_\_\_\_

From where did Earth come? \_\_\_\_\_

\_\_\_\_\_

From where did the heavens come? \_\_\_\_\_

\_\_\_\_\_

Describe the children of Mother Earth and Father Heaven.

\_\_\_\_\_

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How did ordinary humans come about?

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**QUEST SHEET**

**Myths vs. Science**

	Myths	Science
Can it be proved right or wrong?		
How is it developed?		
Is it tested?		
Is it open to revision?		
How are numbers used?		
Give an example.		

**QUEST SHEET**

**Myths of Persephone vs. Science**

	Myth of Persephone	Science
How does it explain winter?		
Can it be observed?		
Can it be proved right or wrong?		
How did this explanation develop?		
Is it tested?		
Is it open to revision?		
How are numbers used?		

# “Making Days: Were the Calendar Makers Lunatics or Just Moonstruck?”

## Theme

“The calendar is intolerable to all wisdom, the horror of all astronomy and laughing stock from a mathematician’s point of view.”

Roger Bacon (ca. 1214 – ca. 1292)

## Goal

Students will learn about ancient societies’ calendars based on the moon or the sun.

## Who?

**Roger Bacon** – a thirteenth century monk who said that the calendar was wrong and needed to be changed

## What ?

**lunar calendar** – a calendar based on the Moon

**solar calendar** – a calendar based on the Sun

**Sirius** – the brightest star in the Northern Hemisphere, on which the Egyptians based the beginning of their new year

## Where?

**Mesopotamia** – a civilization in the Middle East that included Babylon (see map, page 5)



*“Lunar calendar or solar calendar, which is best? I wish someone would shed some light on this subject.”*

**China** - country in the Far East

**Islamic country** – a country in which many people follow the teachings of Mohammed

**Egypt** – country in northeast Africa (see map, page 5)

## QUEST SHEET

### Read-Record-Share

Directions: You are a wise person in charge of developing a calendar that your society will use to keep track of time. Chose the society to which you belong.

Babylon      Islamic country      China      Egypt

Read chapter 3, pages 20 - 23, to gather information about the kind of calendar you will develop. You will use this information to appear on a panel to promote the advantages of your calendar. Your calendar may have some bad features too. Be ready to suggest remedies for the problems with your calendar.

I am a wise person representing the ancient society of \_\_\_\_\_.

My calendar is based on the \_\_\_\_\_.

Number of months is \_\_\_\_\_. Length of months is \_\_\_\_\_.

Length of year is \_\_\_\_\_.

Some advantages of my calendar are

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Some problems with my calendar are

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I solve the problems by

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## You Be the Scientist

### Tidal Time

On a voyage with Pytheas and the Phoenicians in 300 BCE, you come across an island in the Atlantic. The people on this island build boats and make their living as fishermen. Because of a reef close to the shore, they can only leave the island or return to it at high tide, when the water is high enough for their boats to pass safely over the reef. There are usually two high tides a day, so they leave the island at first high tide and return at the second high tide. They keep detailed records of when high tide occurs because it is so important to them. Here is their record for the past 31 days.

**Your Quest:** Do the high tides have a pattern? If so, what is it?

**Your Gear:** one sheet of graph paper

**Your Routine:** On the X axis (horizontal) of your graph paper, number the days 1-36. On the Y axis, write hours starting with 12 a.m., 1 a.m., 2 a.m., etc until you have labeled a complete 24-hour day and reach 12 a.m. again. Using the information from the Tidal Time chart, make a dot for each high tide time on each day. Make a square to indicate the days when there is no second high tide.

**Reporting Home:** Answer the following questions.

1. What pattern do you see in the two high tides for the 31 days?

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2. Fill in the predicted dots or the high tide for the next five days (days 32-36).

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3. If the island fishermen base their days on high tides, what might their calendar be like?

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Tidal Time Chart

Day	Time of First High Tide	Time of Second High Tide
1	11:16 am	11:44 pm
2	No high tide	12:10 pm
3	12:44 am	1:20 pm
4	1:50 am	2:15 pm
5	3:00 am	3:24 pm
6	4:12 am	4:34 pm
7	5:20 am	5:38 pm
8	6:19 am	6:36 pm
9	7:12 am	7:27 pm
10	7:59 am	8:14 pm
11	8:44 am	9:00 pm
12	9:28 am	9:44 pm
13	10:12 am	10:29 pm
14	10:58 am	11:16 pm
15	11:46 am	No high tide
16	12:05 am	12:36 pm
17	12:56 am	1:29 pm
18	1:50 am	2:24 pm
19	2:47 am	3:22 pm
20	3:46 am	4:21 pm
21	4:43 am	5:16 pm
22	5:34 am	6:04 pm
23	6:19 am	6:45 pm
24	6:59 am	7:23 pm
25	7:37 am	7:57 pm
26	8:12 am	8:31 pm
27	8:48 am	9:07 pm
28	9:26 am	9:46 pm
29	10:09 am	10:33 pm
30	10:59 am	11:28 pm
31	11:57 am	No high tide

"The calendar is intolerable to all wisdom, the horror of all astronomy and a laughing-stock from a mathematician's point of view."



Scientists Speak  
Roger Bacon (ca. 1214 – ca. 1292)