LESSON 20

TEXAS ALMANAC TEACHERS GUIDE

SOCIAL STUDIES TEKS

4 - 6, 23

7 - 8, 21

8 - 29

Calendars in Texas

- *The Seasons, Eclipses, Major Meteor Showers*
- *Morning and Evening Stars*
- *Astronomical Calendar*
- *206-Year Calendar, A.D. 1894–2099, Inclusive*

INSTRUCTIONAL SUGGESTIONS

1. **THIS DAY IN HISTORY:** Using "A Brief Sketch of Texas History," "Extreme Weather Records in Texas," and "206-Year Calendar, A.D. 1894–2099, Inclusive," students will compute the day of the week each of the events occurred on the **This Day in History** **Student Activity Sheet**. Then have student make observations about the information. For example: On what day did most events occur? On what day did the least number of events occur?

2. **CLASS BIRTHDAYS:** Students will visit the United States Naval Observatory's website (**http://www.usno.navy.mil/USNO/astronomical-applications**), "Data Services" section, to determine the exact rise and set times of the sun and moon at their location on their birthday this year. As a class, record the rise and set times for each student on the **Class Birthdays** **Student Activity Sheet.** Use the data to create a class line graph or bar graph (use Graph Grid in Appendix).

3. **WORD SEARCH** Students will complete the **Astronomical Calendar Word Search**, using the "Astronomical Calendar" section in any edition of the Texas Almanac. Students should fill in the blanks first and then use these terms to complete the word search.

A "star party" at the Frank N. Bash Visitors Center at McDonald Observatory. Photo by Frank Cianciolo; McDonald Observatory.

This Day in History

DIRECTIONS: Investigate each event using "A Brief Sketch of Texas History" and "Extreme Weather Records in Texas" to find dates. Then use the "206-Year Calendar, A.D. 1894–2099, Inclusive" to figure the day of the week. Write the day of the week and the date in the blanks that precede the year like this: **Wednesday, Jan. 1, 2014.**

1. Hurricane destroys half of Galveston and kills at least 6,000 people; it is the greatest natural disaster in human terms in U.S. history. _____ , _____ , **1900**
2. Gusher drilled by mining engineer Captain A. F. Lucas at Spindletop, near Beaumont, brings Texas into the Petroleum Age. _____ , _____ , **1901**
3. On Black Tuesday, the stock market crashes, ushering in the Great Depression. _____ , _____ , **1929**
4. The temperature reached its record low, 23°F, at Seminole. _____ , _____ , **1933**
5. The temperature reached its record high, 120°F, at Seymour. _____ , _____ , **1936**
6. Bombing of Pearl Harbor in Hawaii by the Japanese pulls the United States into World War II. _____ , _____ , **1941**
7. Allies invade Normandy (D-Day). _____ , _____ , **1944**
8. V.E. Day marks the end of World War II in Europe. _____ , _____ , **1945**
9. World War II officially ends when Admiral Chester Nimitz, a Texan, accepts the Japanese surrender. _____ , _____ , **1945**
10. President John F. Kennedy is assassinated in Dallas; Vice President Lyndon B. Johnson succeeds to the office, becoming the 36th president of the United States. _____ , _____ , **1963**
11. The 19th Amendment (woman suffrage) is ratified. _____ , _____ , **1920**
12. Apollo 11 lands on the moon. _____ , _____ , **1969**
13. The 26th Amendment (suffrage for 18-year-olds) is ratified. _____ , _____ , **1971**
14. Berlin Wall is torn down. _____ , _____ , **1989**
15. Ann Richards is elected governor of Texas. _____ , _____ , **1990**
16. Kay Bailey Hutchison becomes the first woman to serve as United States senator from Texas. _____ , _____ , **1993**
17. Terrorists attack the United States. _____ , _____ , **2001**

Class Birthdays

STEP 1 DIRECTIONS: Use the Texas Almanac's "Astronomical Calendar" or the United States Naval Observatory website — **http://www.usno.navy.mil/USNO/astronomical-applications** — to fill in the following chart.

STEP 2 DIRECTIONS: Record each student's name, birthday, sunrise time, and sunset time on the chart, below, in order from oldest to youngest.

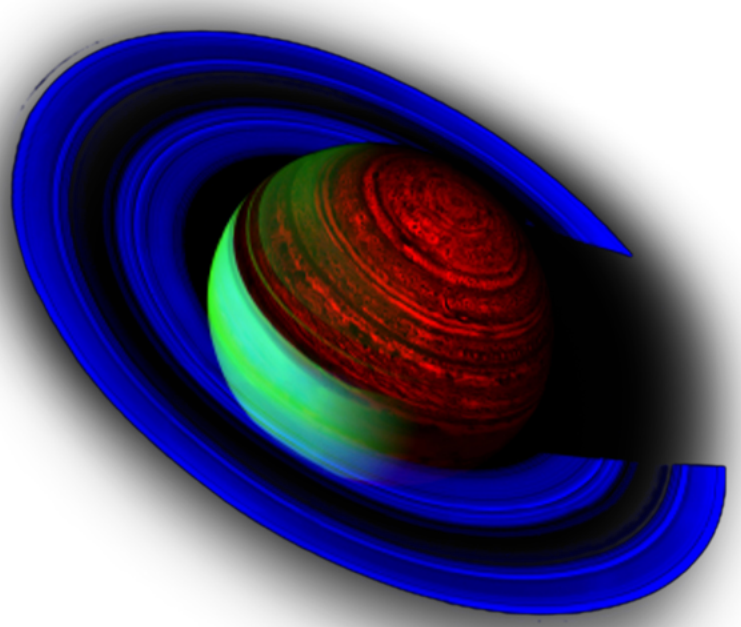
STEP 3 DIRECTIONS: Using a spreadsheet program or the Line/Bar Graph Grid (Appendix), create a graph of the birthdays' day length for the class.

STUDENT'S NAME	BIRTHDAY	SUNRISE TIME	SUNSET TIME

Astronomical Calendar Word Search

(For use with the Texas Almanac 2014–2015)

1. An annular eclipse of the sun was visible on April 29, 2014, in this continent, which lies in the Southern Hemisphere: _____ .
2. _____ is the point at which a planet's orbit is farthest from the sun.
3. _____ is that point of the moon's orbit that is farthest from the Earth.
4. _____ is the county seat of the county that is the approximate geographical center of the state.
5. The time period from the second Sunday in March to the first Sunday in November is called _____ Saving Time.
6. On July 3, 2014, the _____ was at its aphelion.
7. A total eclipse of the moon will ***not*** be visible in the western portion of the state of _____ on September 28, 2015.
8. The planet _____ will be the evening star from January 1 to April 18, 2015.
9. The _____ shower Leonid is at its peak on November 17, 2014.
10. _____ is that point of the moon's orbit that is nearest the Earth.
11. _____ is the point at which a planet's orbit is nearest the sun.
12. On March 20, 2014, the season of _____ begins.
13. The planet _____ will be the morning star from January 17 to September 17, 2014.
14. On December 21, 2015, the season of _____ begins.

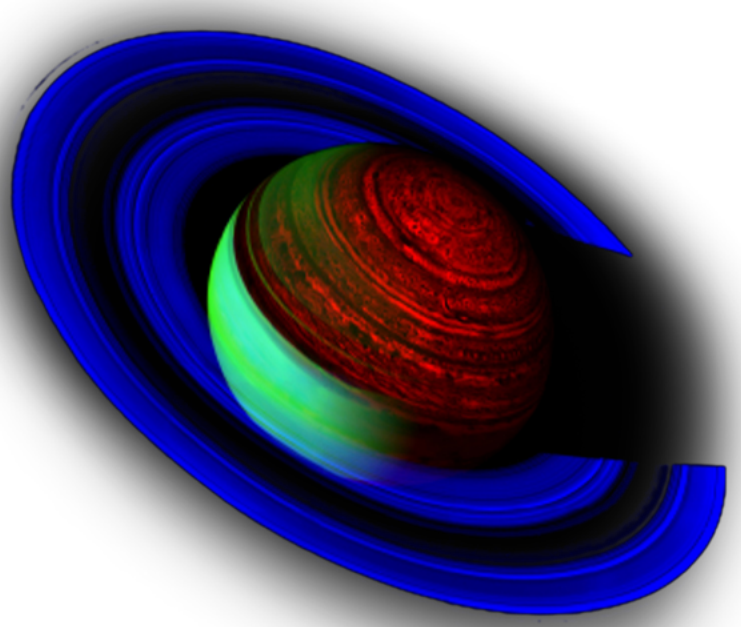


This image of Saturn, provided by NASA on May 31, 2007, was taken as the Cassini spacecraft flew over the unlit side of the sixth plant, capturing its glow.

Astronomical Calendar Word Search

(For use with the Texas Almanac 2012–2013)

1. A penumbral eclipse of the moon was visible on November 28, 2012, in this continent, which lies in the Southern Hemisphere: _____ .
2. _____ is the point at which a planet's orbit is farthest from the sun.
3. _____ is that point of the moon's orbit that is farthest from the Earth.
4. _____ is the county seat of the county that is the approximate geographical center of the state.
5. The time period from the second Sunday in March to the first Sunday in November is called _____ Saving Time.
6. On July 4, 2012, the _____ was at its aphelion.
7. A penumbral eclipse of the moon was **not** visible in the western portion of the state of _____ on October 18, 2013.
8. The planet _____ will be the evening star from January 1 to February 9, 2013.
9. The _____ shower Leonid is at its peak on November 18, 2013.
10. _____ is that point of the moon's orbit that is nearest the Earth.
11. _____ is the point at which a planet's orbit is nearest the sun.
12. On March 20, 2013, the season of _____ begins.
13. The planet _____ will be the morning star from January 1 to February 16, 2013.
14. On December 21, 2013, the season of _____ begins.

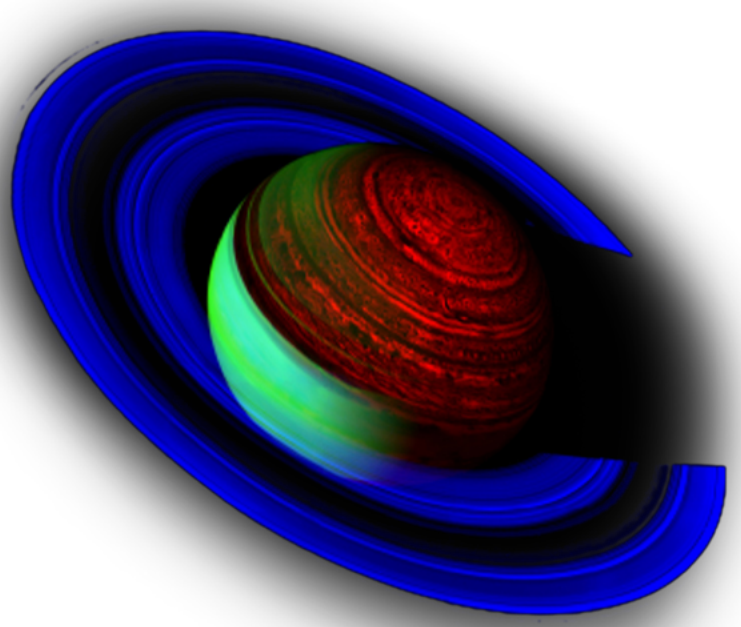


This image of Saturn, provided by NASA on May 31, 2007, was taken as the Cassini spacecraft flew over the unlit side of the sixth plant, capturing its glow.

Astronomical Calendar Word Search

(For use with the Texas Almanac 2010–2011)

1. A partial eclipse of the moon was visible on June 26, 2010, in this continent, which lies in the Southern Hemisphere: _____ .
2. _____ is the point at which a planet's orbit is farthest from the sun.
3. _____ is that point of the moon's orbit that is farthest from the Earth.
4. _____ is the county seat of the county that is the approximate geographical center of the state.
5. The time period from the second Sunday in March to the first Sunday in November is called _____ Saving Time.
6. On July 6, 2010, the _____ was at its aphelion.
7. A partial eclipse of the sun was visible in the northern portion of the state of _____ on June 1, 2011.
8. The planet _____ was the evening star from January 29 to December 5, 2010.
9. The _____ shower Leonid was at its peak on November 18, 2010.
10. _____ is that point of the moon's orbit nearest the Earth.
11. _____ is the point at which a planet's orbit is nearest the sun.
12. On March 20, 2011, the season of _____ began.
13. The planet _____ was the morning star from November 4 to December 31, 2010.
14. On December 21, 2010, the season of _____ began.



This image of Saturn, provided by NASA on May 31, 2007, was taken as the Cassini spacecraft flew over the unlit side of the sixth plant, capturing its glow.

Astronomical Calendar Word Search *(continued)*

B W T V E N U S R S J C D V J O

F R N H A N G Y S R M S L R R A

K L Q A G U K P U O Y S U M P B

B C B M K I S W P W Z T Z O R L

Z L D N S S L T I Z N F G A N G

O P R I O N A Y R S P E D O D K

A O O J V Z W L A A E Y I D L T

X F E A J R B A A D L L R C K M

T G T U K N T T R N E I D I M E

B B E U V N Z S O H P K A F O W

A P M T H O G I I E W Q U N M T

H X Z R Y N L R R Z P I P O A S

T F C L I E E I Q M F F N D B R

R R B R H P G O I Q L V E T V A

A Z P P W E J X D G M H X I E M

E S A Z E M A B T Z O Z N B P R