**Calendar Systems around the World**

People have always needed to keep track of time. Ancient farmers needed to know when to plant their crops. If they did not know this, they might plant their fields too close to the end of winter. Late frosts could kill their crops in the fields. That would leave the farmers and their families to starve later on.

People have looked to the movements of the sun and the moon to keep track of time. For example, the Arabs of the Middle East looked at the phases of the moon to keep track of time. From them they made a lunar calendar. The Romans looked at how the sun moved across the sky to keep track of time. From this they made a solar calendar. And the Chinese used both the sun and the moon to keep track of time. From this they made a lunisolar calendar. Each of these calendars worked well. They helped each of these cultures to thrive.

**The Julian Calendar**

We owe a great deal to Julius Caesar. He gave the world the Julian calendar. In 45 B.C. he had Rome adopt a solar calendar. He got this idea from the Egyptians. Some scholars say he did this to please his consort, Queen Cleopatra of Egypt. But he probably did it for other reasons. More than likely, he did it to clean up the messy way Romans kept track of time. He also did it to end corruption in the Roman government.

Before Caesar, the priests of Rome made the calendar. Normally, its year had 354 or 355 days. This is far shorter than the actual year. To make up for this, the Roman priests added a month now and then to the year. But the priests were dishonest. Rich men could bribe them to add the extra months when they wanted. This let them keep their friends in political office longer in some years. It also let them get rid of political enemies sooner in other years.¹

Caesar did not like the way rich men and priests could play around with the calendar. The year he introduced was the same length year after year. It normally had 365 days but never more than 366 days. It had twelve months of different lengths. We would be familiar with the names of all of these months except one.² The people of Rome finally had a simple calendar they could count on year after year. Rich men could not change it to suit their political goals.

Still, the Julian calendar had a fault. The Julian year was shorter than the tropical year by about six hours. (The tropical year is the time it takes the earth to make one orbit around the sun.) The Romans knew about this problem. They made up for it by adding an extra day to the month of February every few years.³ These leap years made sure that the months fell in the same seasons year after year. But they also made the Julian year 11 minutes longer than the tropical year.

The Julian calendar became Rome’s calendar for the next 500 years. All of Europe from Russia to England used it, too. They used it up through the Middle Ages at least. Some kingdoms used it beyond that time. Russia, for example, used it all the way up until A.D. 1927.

Few people use the Julian calendar anymore. Most nations on earth stopped using it by the 20th century A.D. Even so, some people still use it today. A few parishes of the

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¹ In 47 B.C., the year was 355 days long. In the following year of 46 B.C. the year was 445 days long.

² Only the eighth month Sextilis is different from ours. Later it was renamed August to honor Caesar Augustus.

³ At first the Romans made a mistake. They made leap years every three years. But they saw their mistake during the reign of Caesar Augustus. From that point on, leap years came every four years, just like today.
Orthodox Church in America use it to keep track of their holy days. Because of this, Christmas for them falls on January 7th instead of December 25th.

**The Gregorian Calendar**

The Julian year was 11 minutes longer than the tropical year. During the days of the Roman Empire, this meant little. But over time, this little error added up. For every 128 years people used the calendar, it got off track one day. By A.D. 1580, the calendar was off by 10 days. Church leaders worried that Easter would no longer come in spring when they thought it should. If things kept going the way they did, it would come in summer.

The leader of the Catholic Church, Pope Gregory XIII, wanted to fix this glitch. In A.D. 1582, he had 10 days dropped from the calendar. So, October 15th followed October 4th for that year. He also changed the way the leap year system worked for century years. He said they would only be leap years if you could divide them evenly by 400. So, 1600 was a leap year. 1700 was not. He also changed the way the church pinned down the date of Easter. His changes became known as the Gregorian calendar.

Catholic kingdoms like Spain made the change to the new calendar quickly. In the years around A.D. 1582, though, many people had left from the Catholic Church. They had set up their own Protestant churches in a time called the Reformation. Thus, many of them did not want the new calendar. They did not trust the pope. They thought he had made the new calendar to keep them from worshiping on the days God wanted them to worship. Thus, some nations took a little longer to accept it. Britain, for example, did not accept the new calendar until A.D. 1752.

Around Gregory XIII’s time the people of Europe began to take over the rest of the world. Wherever they went, they Gregorian calendar went with them. They used it to rule over other people and do business with them. Thus, most of the rest of the world adopted it as well. The world came to know it as the Christian and Western calendar as well. Most nations still use it for civil and business purposes today.

**Dionysius Exiguus**

We owe our calendar to Julius Caesar and Pope Gregory XIII. But we owe how we count our years to a man named Dionysius Exiguus. His name means “Denis the Little” in English. He was a monk who lived around A.D. 500.

Dionysius Exiguus was a smart man and a scholar. Because of this, Pope John I asked him to make a timeline of history. He noted, though, that most scholars of the day counted the years since a man named Diocletian ruled the Roman Empire when they wrote dates. The monk did not like this. That emperor had hurt Christians with his “Edict against Christians” of A.D. 305. With it he had them sold into slavery. He also had their churches burned to the ground. Dionysius could not stand the thought using his reign to count the years on his timeline. So, he chose to count the years since Christ’s birth instead.

Some scholars think Dionysius Exiguus might have gotten the year Christ was born wrong. So few records exist from that time, however. So, no one can say for sure if he was right or wrong. Thus, everyone continues to take his timeline for granted as fact.

Dionysius Exiguus called all of the years after Christ’s birth “Anno Domini.” This Latin phrase means “In the Year of Our Lord” in English. We label all of the years before His birth “Before Christ.” Scholars shorten these to “A.D.” and “B.C.”

Many people in the world do not believe in Christ, like Jews and Muslims. They feel uneasy using “Anno Domini” and “Before Christ.” When they use them, it implies they believe in Christ when they do not. As a result, they sometimes use the label “Common Era” instead...
of “Anno Domini.” They also use “Before the Common Era” instead of “Before Christ.” They shorten these to “C.E.” and “B.C.E.”

The timeline he came up with looks like a number line. It does not have a zero, however. Note that the years labeled “A.D.” get larger from the time of Christ to the present day. Thus, 1900 came before 2000. When you look at the years labeled “B.C.” they get larger as you go from the time of Christ into the past. Thus, 200 B.C. came before 100 B.C.

Toward the Present

600 500 400 300 200 100

B.C.

Christ’s Birth, A.D. 1

100 200 300 400 500 600

Toward the Past

Religious Calendars

For centuries, Christian Europe controlled the world. Thus, the world adopted the Western calendar for business and government. But many of the world’s people had their own calendars. They had used them for centuries. Religiously they mean a great deal to the people who use them. So often they continue to use them to this day alongside the West’s calendar.

The Jewish Calendar

Hillel II invented the Jewish calendar around A.D. 359. He presided over the Sanhedrin. As a lunisolar calendar, it uses both the sun and the moon to track time. Its year has 12 months. Half of those months have 30 days. The other half have 29 days. So the Jewish year is 354 days long. Leap years come every three years. These years have an extra month added to them. The Jewish calendar counts its years from the date of creation. According to Jewish holy texts, this happened in the year 3760 B.C. of the Western calendar. They label the years in their calendar “Anno Mundi.” This Latin phrase means “Year of the World” in English. Scholars shorten it to “A.M.” Thus, the year 2012 saw the beginning of the Jewish year A.M. 5772. Jewish people all over the world use this calendar for religious purposes. The modern nation of Israel uses it as their official calendar. They also use the Western calendar for civil and business purposes.

The Islamic or Hijiri Calendar

The people who follow the faith of Islam are called Muslims. They have their own calendar, the Islamic or Hijiri calendar. They base it on the teachings of Muhammad found in the Qur’an, a holy book. The Islamic calendar tracks time with the phases of the moon. Thus, it is a lunar calendar. Its years are 354 days long. Leap years happen every three years, and they are 355 days long. The calendar counts its years from the year Muhammad fled from Mecca to Medina. This happened in A.D. 622 of the Western calendar. Scholars label those years “Anno Hijirae,” a Latin phrase which means “Year of the Hijira.” They shorten it with “A.H.” The year 2012 of the Western calendar saw the beginning of the year A.H. 1390 of the Islamic calendar. Nearly all Muslim countries use this calendar for religious purposes. But they use the Western calendar for business and civil purposes as well.

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4 The Sanhedrin was an ancient Jewish court.
5 Muhammad’s flight from Mecca to Medina is called the Hijira, from which the Hijiri calendar gets its name.
The Chinese Calendar

Legend has it that the Emperor Huangdi made the Chinese calendar around 2637 B.C. It uses the sun and the moon to track time. As such, it is a lunisolar calendar. It normally has 12 month years. They are 353, 354, or 355 days. Leap years add an additional month of 50 days to the year. The Chinese calendar differs from the Jewish, Islamic, and Western calendars. It does not count its years from a single event in time. It counts its years in cycles. They last for 60 years and repeat over and over again. They are named for a number and an animal from the Chinese zodiac. The year 2012, for example, is the Year of the Dragon. The Chinese use this calendar for religious purposes. But they use the Western calendar for civil and business purposes as well.

The Indian Calendar

India has used many calendars for thousands of years. The Calendar Reform Committee made the current Indian calendar in A.D. 1957. It uses the sun and the moon to keep track of time. As such, it is a lunisolar calendar. Normal years have 365 days. Leap years have 366 days. Leap years in the Indian calendar are the same as the leap years in the Western calendar. Years start with a month of 30 days (31 days during a leap year). Five months of 31 days follow. The year finishes with six months of 30 days. The Indian calendar counts its years from the start of the Saka Era of Indian history. This started in A.D. 79 of the Western calendar. Thus, the year 2012 of saw the beginning of the year Saka Era 1933 of the Indian calendar. The Indians use this calendar for religious purposes. They use the Western calendar for business and civil purposes as well.

Conclusion

The world uses many calendars. Many have ancient roots. They hold deep religious meaning for the people who use them. But Christian nations like Britain, France, and the United States lead the world in matters of finance. Thus, the world uses our calendar—the Western calendar—for business and civil purposes.

Flesch-Kincaid Reading Level 6.2

For Further Reading


Calendar Systems around the World

Study Guide Learning Goals: “What calendar system do we use in the West, and how does it work?” (10), “What calendar systems are used by people around the world?” (11)

Directions: Answer the following questions with one or more complete sentences on a separate sheet of paper. Be sure to restate the question in your answer.

1. Why did humans need to keep track of time from the earliest times?
2. What is a lunar calendar?
3. What is a solar calendar?
4. What is a lunisolar calendar?
5. What Roman leader is credited with the creation of the Julian calendar?
6. The chaos marked the Roman calendar in the days before Julius Caesar ordered the creation of the Julian calendar why is this so?
7. Explain how the Julian calendar differed from the Roman calendar.
8. What is the tropical year?
9. The Romans saw that the Julian year was about six hours shorter than the tropical year. How did they address this difference in the Julian calendar?
10. By 1582 CE, what had happened to the Julian calendar after centuries of use?
11. How did Pope Gregory XIII fix the Julian calendar?
12. Why did the Protestant kingdoms of Europe distrust the Gregorian calendar, refusing to adopt it for centuries?
13. What are some other names that the Gregorian calendar is called?
14. Why have most other countries of the world adopt the Gregorian calendar, even though they are not Christian?
15. Who invented the way we number our years in the Christian calendar?
16. Why did Dionysius Exiguus number the years of his chronology from the date of Christ’s birth rather than from the reign of Diocletian?
17. What does AD stand for, and what is that phrase’s English translation?
18. Why do non-Christian scholars object to using the AD/BC system of dating?
19. What does CE stand for?
20. Explain why events that happened in 200 BC came before events that happened in 100 BC.
21. What calendar is used for most of the world’s business transactions and in most of their civil governments?
22. In what ways is the Jewish calendar different from the Gregorian calendar?
23. In what ways is the Islamic calendar different from the Gregorian calendar?
24. In what ways is the Chinese calendar different from the Gregorian calendar?
25. In what ways is the Indian calendar different from the Gregorian calendar?
**Directions:** Complete the table below to compare the different calendar systems discussed in the article.

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<thead>
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<th>Calendar Name</th>
<th>Type of Calendar</th>
<th>Date Started</th>
<th>Event that Started Year Count</th>
<th>Current Year</th>
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<td>Solar</td>
<td>45 BCE</td>
<td>Christ’s Birth</td>
<td>2012</td>
</tr>
<tr>
<td>Gregorian Calendar</td>
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