

Name: _____

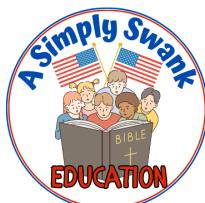
Leap Year - February 29, 2024

This year is a leap year. That means there is an extra day added to the calendar. Leap years happen every four years, with a few exceptions. That's because a year is based on how long it takes the Earth to orbit the sun: about 365 days. In reality, a solar year isn't a perfect 365 days long.



What is a leap year? To be a leap year, the year number must be divisible by four - except for end-of-century years, which must be divisible by 400.

This means that the year 2000 was a leap year, although 1900 was not. 2024, 2028, 2032 and 2036 are all leap years.

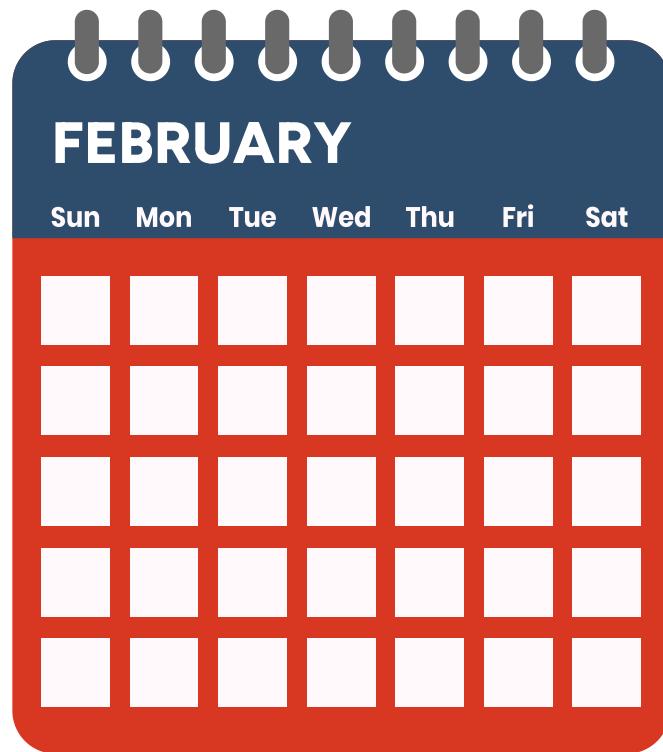


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Fill in the days of
the week on the
Calendar
make the 29th red
please



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If your birthday is February 29, you can celebrate your actual birth date only once every four years. Sound crazy?

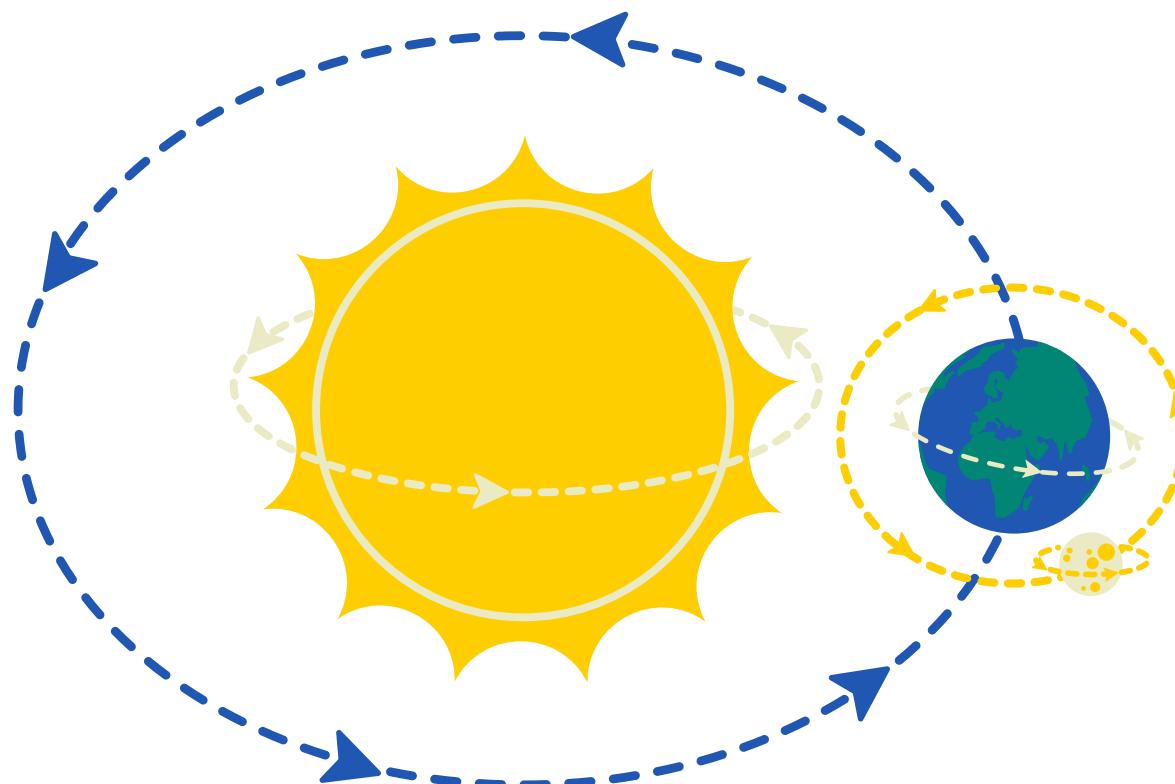
It's not—it means you were born on a leap day.



Leap days are important because they help our calendar match up with the same seasons every year. The calendars we use today have 365 days; the solar, or tropical, year that influences seasons is about 365.2422 days long. A solar year is how long it takes the Earth to revolve around the sun.

Even though .2422 of a day doesn't sound like much, ignoring that fraction means eventually our seasons won't fall in the same months every year. For instance, your school year might eventually start in the spring instead of September. And if the calendar didn't match up with the seasons, farmers would have a more difficult time growing crops, which could affect food supplies.

That's why, in the 16th century, the Gregorian calendar—the calendar most commonly used today—started adding leap days to match the calendar with the seasons. Because four .2422 days equals about one day, February 29 is now added to most years that are divisible by four, like 2024.





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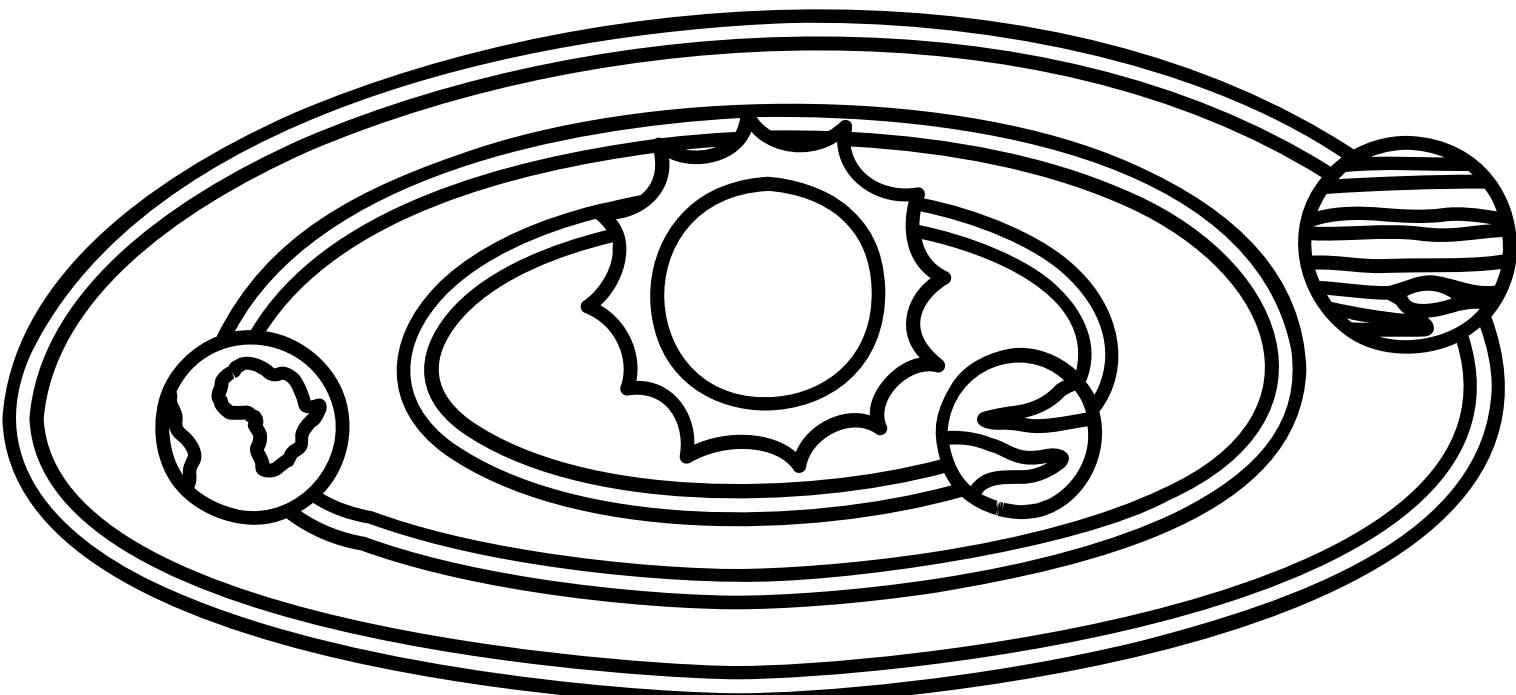
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Leap Year - February 29, 2024

Imperfect calendars

Over the centuries, many cultures have tried to make calendars, but they didn't always get them right. The Sumerians, who lived about 5,000 years ago in what is now Iraq and Kuwait, divided the year into 12 months of 30 days each—which made their 360-day year a week shorter than Earth's yearly journey around the sun.

When the Egyptians adopted this calendar, they solved the problem by adding five days of parties at the end of the year.

Earlier Egyptians—before about 3100 B.C.—and other cultures from places like ancient China and Rome used lunar calendars. They tracked the months by how long it took for the moon to orbit Earth. But lunar months are about 29.5 days; lunar years only about 354 days. That caused an 11-day gap between the calendar and the seasons.





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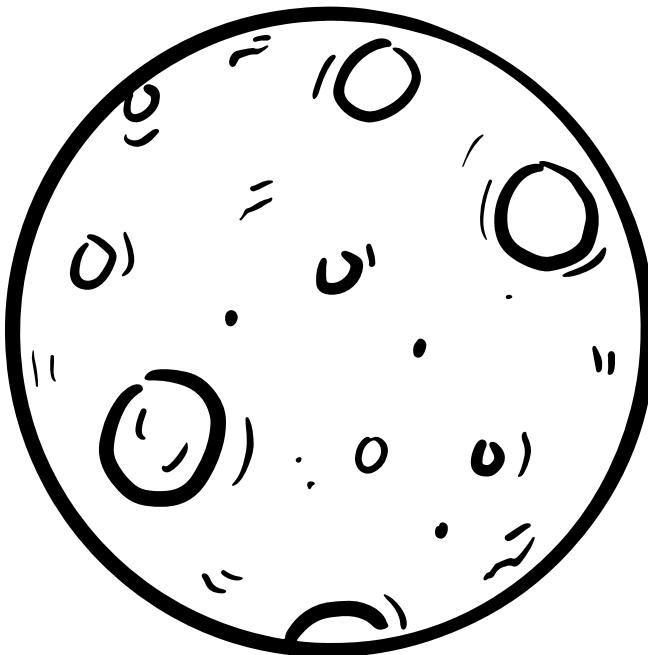
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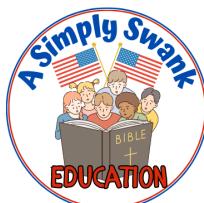
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Today the Islamic calendar—used in countries like Saudi Arabia and Syria—still uses a lunar system—though a single leap day is sometimes added to keep the seasons the same every year.

And though modern China uses the Gregorian calendar for official purposes like the school year, the country also uses a lunar-solar calendar, which tracks both the moon's orbit around Earth and Earth's orbit around the sun, for more traditional customs. That's why Chinese New Year celebrations can start in late January or early February, even though the official calendar starts January 1.





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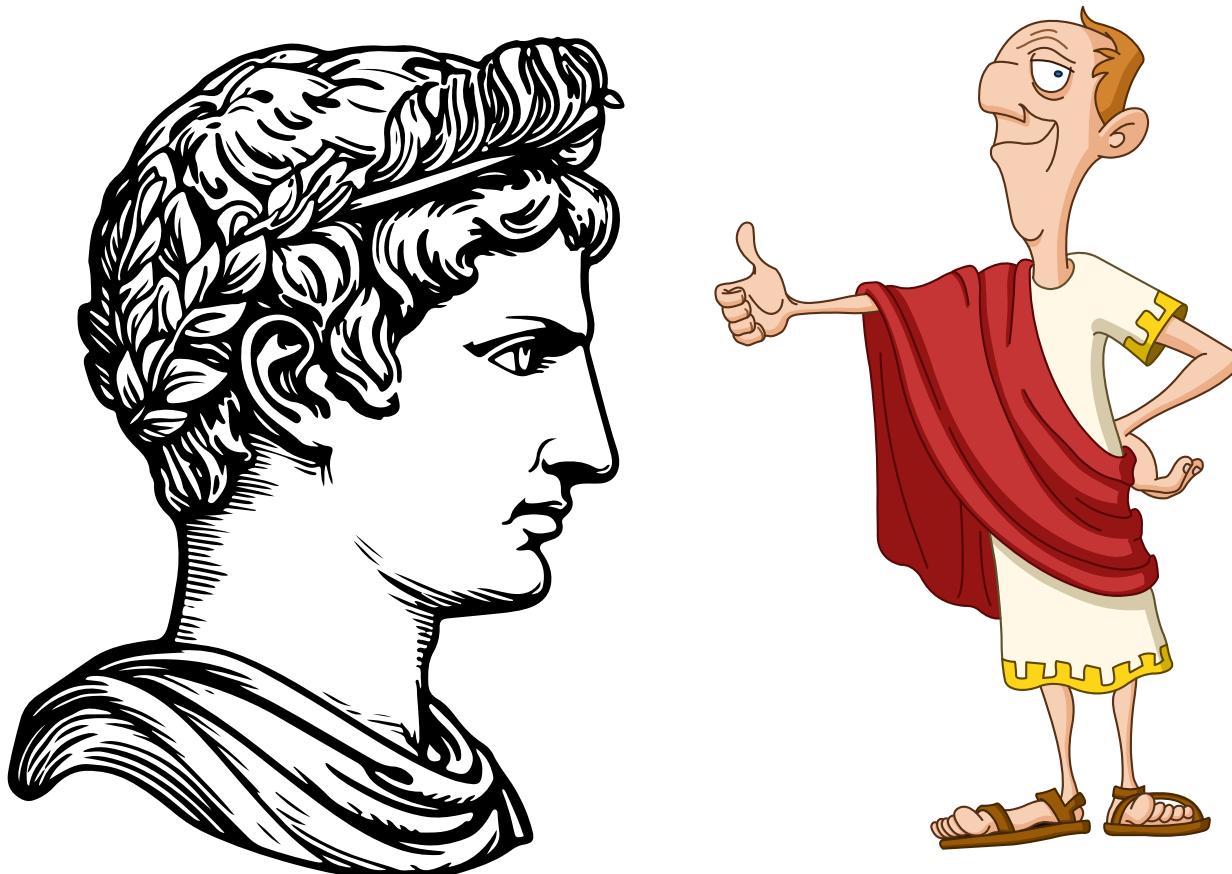
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"Year of Confusion"

By the third century B.C., societies started getting the hang of calendars. For instance, Egypt was observing a 365-day year that included a leap year every four years to correct the calendar.

But other calendar systems still weren't always working. To fix his culture's calendar, Roman emperor Julius Caesar created the Year of Confusion when he decided that the year 46 B.C. was going to be 445 days long instead of 365 days long. He then made a 365.25-day year—a tiny bit longer than the 365.2422 solar year—that added a leap day every fourth year.

But even this Roman system wasn't right. The small difference between 365.25 and 365.2422 made each calendar year about 11 minutes shorter than the seasonal calendar, so the calendar was an entire day short every 128 years.





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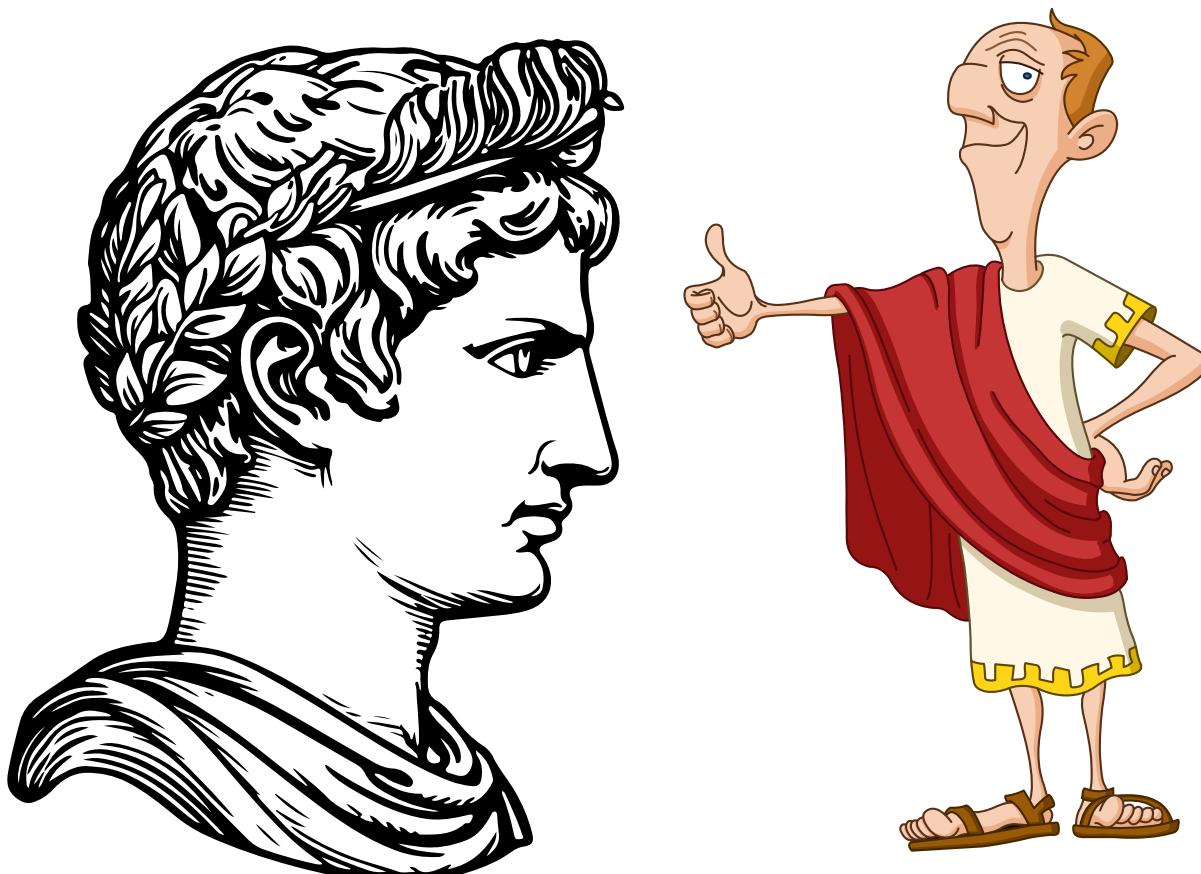
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By the 16th century, major dates and holidays had drifted by 10 days. In Rome, Pope Gregory XIII unveiled his own Gregorian calendar in 1582. That year, he dropped 10 days from the month of October to sync things back up.

He also developed a new leap year system that used the solar year of 365.2422 days, added one leap day every four years, but dropped three leap days every 400 years to keep the calendars from drifting.





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