

Why does February have an extra day every four years?

When is it, why does it happen and everything else you need to know about the leap year



Frogs are associated with leap years Photo: Getty



By [Rozina Sabur](#) 11 Feb 2016

February 29 crops up every four years, but what is a leap year, and why do we have them?

[A leap year, where an extra day is added to the end of February every four years](#), is down to the solar system's disparity with the Gregorian calendar.

A complete orbit of the earth around the sun takes exactly 365.2422 days to complete, but the Gregorian calendar uses 365 days. So leap seconds - and leap years - are added as means of keeping our clocks (and calendars) in sync with the Earth and its seasons.

The Roman calendar did have 355 days with an extra 22-day month every two years, until Julius Caesar became emperor and ordered his astronomer Sosigenes to devise a better system in the 1st Century. Sosigenes decided on a 365-day year with an extra day every four years to incorporate the extra hours, and so February 29 was born.

As an earth year is not exactly 365.25 days long Pope Gregory XIII's astronomers decided to lose three days every 400 years when they introduced the Gregorian calendar.



Clock face showing 1 second before midnight Photo: Alamy

What is a leap second?

Leap years are not directly connected to leap seconds, but both are for the purpose of keeping the earth's rotations in line with our clocks and calendars.

Leap seconds are added to bring the earth's rotation into line with atomic time. A leap second was added at the end of June last year, when immediately before midnight dials read 11:59:60.

Atomic time is constant, but the Earth's rotation is gradually slowing down by around two thousandths of a second per day.

Leap seconds are therefore crucial to ensuring the time we use does not drift away from time based on the Earth's spin. If left unchecked, this would eventually result in clocks showing the middle of the day occurring at night.

The extra second can sometimes cause problems for some networks which rely on exact timings. When a last leap second was added in 2012 Mozilla, Reddit, Foursquare, Yelp, LinkedIn, and StumbleUpon all reported crashes and there were problems with the Linux operating system and programmes written in Java.

What if you're born on February 29?

People who are born on February 29 are referred to as "leaplings", or "leapers". In non-leap years, many leaplings choose to celebrate their birthday on either February 28 or March 1, while purists stick to February 29 for the occasion.

Some suggest those born just after midnight on February 29 should celebrate their birthdays on February 28, while those born just before midnight on March 1 should celebrate their birthdays on that day. Those born around midday are less fortunate when it comes to picking a side.

Famous people born on a leap day

The chances of having a birthday on a leap day are extremely slim - the odds are one in 1,461 to be exact - and there's quite an eclectic mix of famous people born on the day.

Frederic - character in Pirates of Penzance

John Byrom - Romantic poet

Pope Paul III - 16th Century pontiff

George Bridgetower - 19th Century musician

Ann Lee - leader of the Shakers

Gioacchino Rossini - Italian composer

Charles Pritchard - British astronomer

Alan Richardson - composer

Ja Rule - rapper



Sandra Bullock proposes to Ryan Reynolds in 'The Proposal' Photo: REX

Do Women propose on leap years?

[Leap years are also marked as a time for women to propose to men.](#)

One theory is that the custom dates back to the 5th Century, when, legend has it, an Irish nun called St Bridget complained to St Patrick that women had to wait too long for their suitors to propose. St Patrick then supposedly gave women the chance to ask the question every four years. The tradition is not thought to have become commonplace until the 19th Century.

Then there's the theory that Queen Margaret of Scotland was behind the fabled Scottish law of 1288. The law allowed unmarried women the freedom to propose during a leap year, and the man who refused was handed a fine. The truth behind this tale is dubious at best - after all Queen Margaret was just eight years old when she died and scholars have been unable to find a record of the law.

Others argue that the tradition of women proposing on this day goes back to the times when the leap year day was not recognised by English law. Under this theory, if the day had no legal status, it was acceptable to break with the convention of a man proposing.

In Denmark, if a man turns down a proposal they must give the woman 12 pairs of gloves and in Finland the penalty is fabric for a skirt.

Other Leap year facts

- In Greece couples often avoid getting married in a leap year, believing it to be bad luck
- Food for thought: If you work on a fixed annual wage, today is just one more day's work than you would usually have to do for your salary.
- As touched on above, a year that is divisible by 100, but not by 400, is not technically a leap year. Therefore 2000 was a leap year under the Gregorian calendar, as was 1600. But 1700, 1800 and 1900 were not. "There's a good reason behind it," Ian Stewart, emeritus professor of mathematics, told the BBC. "The year is 365 days and a quarter long - but not exactly. If it was exactly, then you could say it was every four years." Pope Gregory and his astronomers' solution will have to be rethought in around 10,000 years, Prof Stewart points out.
- February 29 also marks Rare Disease Day.
- Leap years are also known as intercalary or bissextile years

Ref.: <http://www.telegraph.co.uk/travel/festivalsandevents/12105958/Leap-Year-2016-Why-does-February-have-an-extra-day-every-four-years.html>

Look also here www.folklore.aboutphilippines.ph