

**Leap years and why we need them** - It's a leap year which means there's an extra day in the calendar - 29 February 2020. But why do we need it? The answer is a little more complicated than you may think.

## 1. Watch the video "Leap Year" and fill in the gaps

2020 is a \_\_\_\_\_. That means there's an extra day in the calendar – the 29<sup>th</sup> of February.

But why \_\_\_\_\_ leap years? And how do we decide when \_\_\_\_\_?

The answer is a little more complicated \_\_\_\_\_ think.

\_\_\_\_\_ how it works:

We measure a day as how long it takes the Earth to spin \_\_\_\_\_ axis – that's 24 hours.

And we measure a calendar year as how long it takes the Earth to orbit the Sun. – 365 days. Except the time it actually takes \_\_\_\_\_ circle the Sun is \_\_\_\_\_ days. So that's **roughly** a quarter of a day

longer, which adds up to a full day every four years.

To keep everything in **sync**, this full day is added \_\_\_\_\_ shortest month – February. And that's what we call a leap year.

But we don't actually have a leap year every four years. And here's why:

Remember how we **rounded up** that \_\_\_\_\_? Well that difference does

eventually add up, pushing the \_\_\_\_\_ system out of sync again – by three days \_\_\_\_\_ every 400 years, to be precise.

In order to **redress** this slight imbalance, we have to **skip** a leap year every \_\_\_\_\_ so no add that extra day. But how do we decide when to have a leap year and when to skip?

The first rule is that the year \_\_\_\_\_ must be divisible by four.

The second rule is that a leap year \_\_\_\_\_ that is divisible by 100.

If it does, no leap day is added to that calendar year.

But to make things even more complicated, \_\_\_\_\_ exception \_\_\_\_\_ second rule:

If a leap year \_\_\_\_\_ divided \_\_\_\_\_ 400 the leap day **is** added after all.

That's why a leap day happened in the years \_\_\_\_\_,

\_\_\_\_\_.

We have Pope Gregory \_\_\_\_\_ creating this century rule some 400 years ago. His

changes marked the beginning of the Gregorian Calendar, which is \_\_\_\_\_ across the world

today. So, leap years exist to help us stay in sync with the real astronomical year. And if you \_\_\_\_\_

\_\_\_\_\_ **nerdy**, there's also the more recent introduction of leap seconds... but maybe we'll explain that another year.

## VOCABULARY

**Leap** /li:p/ (leapt or leaped) = jump or spring a long way, to a great height, or with great force, jump over, vault, spring

**Leap to (one's) feet** = quickly or abruptly assume a standing position

**Leap/jump to conclusions** = To make decisions or form opinions before one has all the pertinent facts.

**leap in the dark** = An act whose consequences cannot be predicted.

**Leap-frog** = a game in which one person vaults over another's bent back, pushing off from his hands.

**Leap year** = every fourth year, which consists of 366 days, February having 29, ie 1996, 2000, 2004 etc

**That's one small step for a man, one giant leap for mankind** = Words said when Armstrong first stepped onto the Moon (20 July 1969)

**Roughly** /'rʌfli/ = approximately, without taking a lot of care to make something perfect - in a manner lacking gentleness; harshly or violently.

**Rough** /rʌf/ = 1. having an uneven or irregular surface; not smooth or level. Opposite: flat, smooth

2. (of a person or their behaviour) not gentle; violent, ill-mannered. Opposite: gentle, refined, kind

**Sleep rough** = spend the night in the open; be without a home or without shelter

**Rough-and-'ready** = not carefully made or finished, but good enough. *a rough-and-ready meal.*

**Sync** /sɪŋk/ = synchronization - in sync with

**Round up** = increase a number to the nearest whole number, or the nearest number ending in zero.

**Round down** = lower (a number) to the nearest whole number or ten, hundred, or thousand below it.

**Redress** /rɪ'dres/ = remedy or set right (an undesirable or unfair situation), correct, rectify

**Skip** /skɪp/ = move by hopping on one foot and then the other, bounce - jump over a rope (*skipping rope*) that is being turned under the feet and over the head - miss out (a meal, part of a book, lesson, school etc.)

**Nerdy** /'nɜ:di/ = unfashionable and socially inept or boringly studious - characterized by an obsessive interest in something, especially technology.