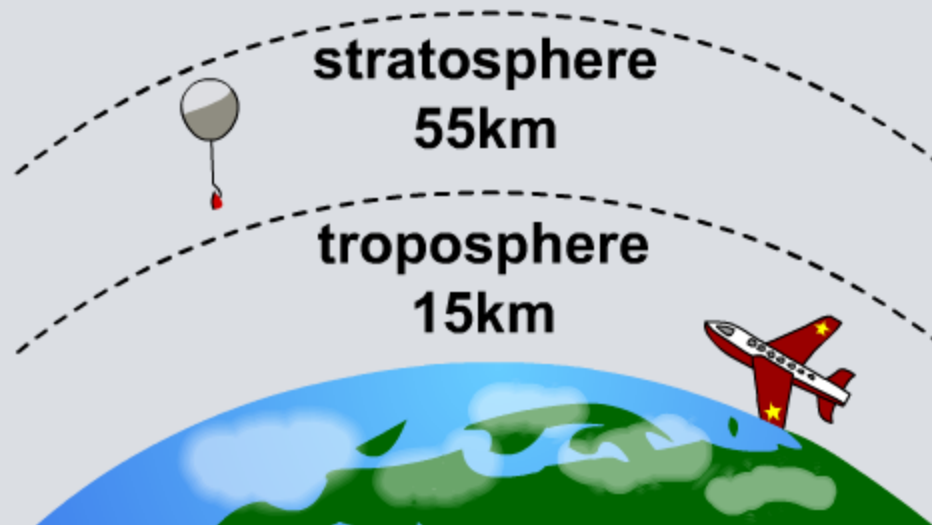


The Atmosphere

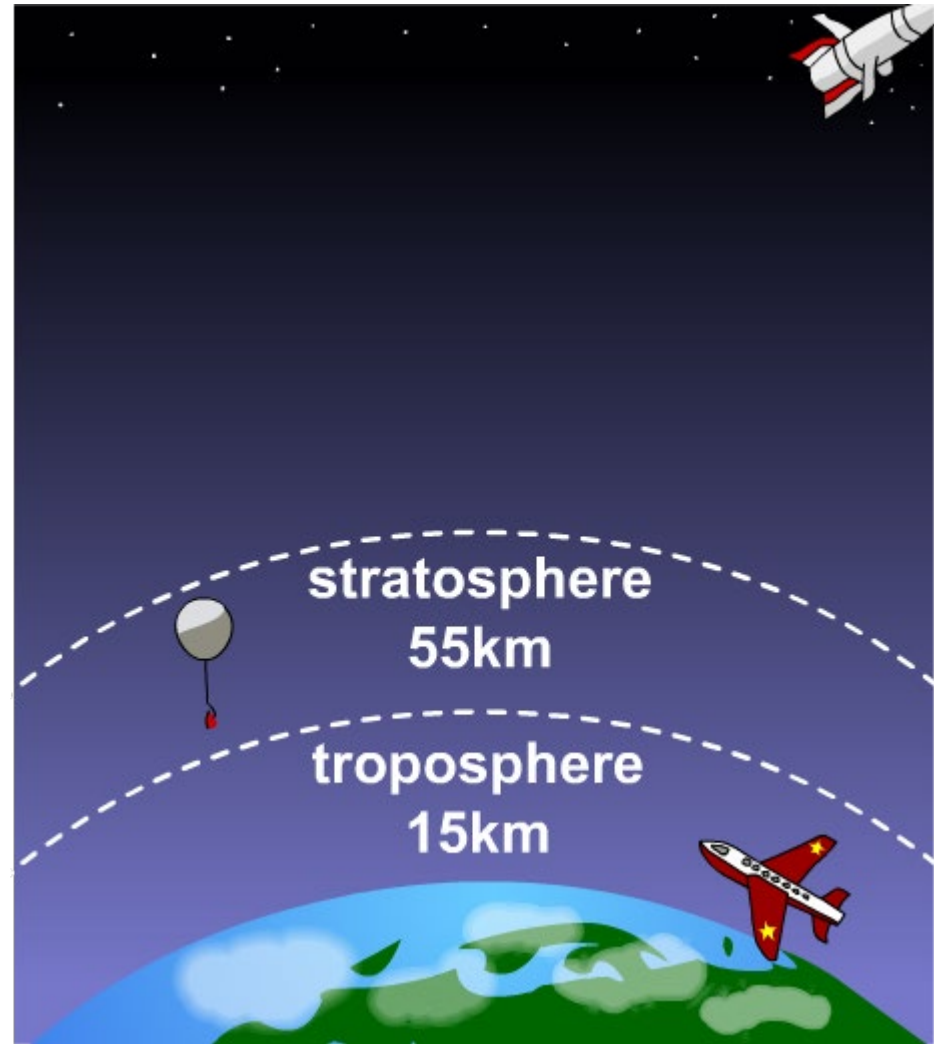


Why is the atmosphere important?

The Earth is different than the other planets in our solar system because it has an **atmosphere** that can support life.

The atmosphere is an envelope of different gases (**air**) surrounding Earth.

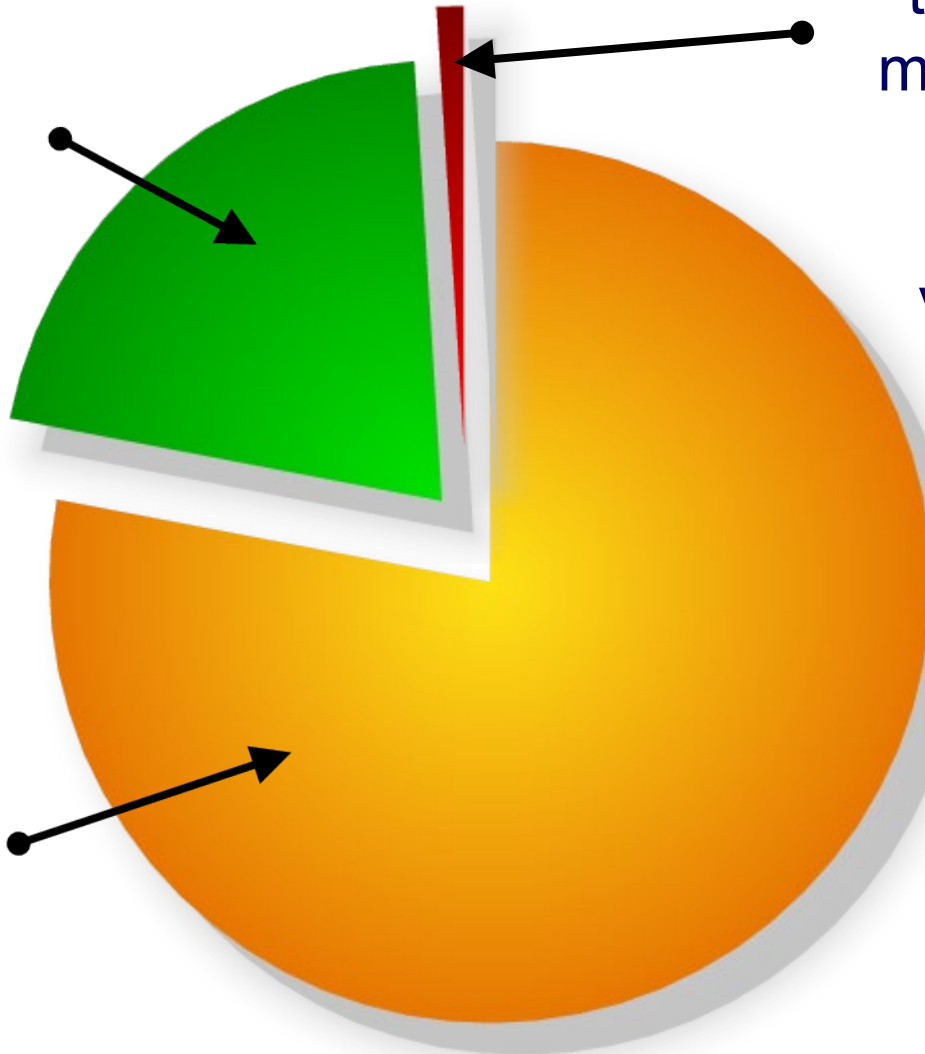
80% of atmospheric gases are in the 15km closest to Earth. This is a very thin layer compared to the Earth's diameter, which is 12,756 kilometers.



What is the atmosphere made of?

The gases that make up the atmosphere are:

about 21%
is **oxygen**



the remaining 1% is
mostly **argon** (0.93%)
with some **carbon
dioxide** (0.035%),
varying amounts of
water vapor and
trace amounts
of other gases

about 78%
is **nitrogen**



Does Earth's atmosphere change?

The current composition of the air has been roughly the same for nearly 200 million years, but the amounts of different gases have changed over time.

About 3.5 billion years ago, the atmosphere on Earth would have been similar to the atmosphere on Mars today.

It would have contained large quantities of carbon dioxide, but not much oxygen or nitrogen.

What theories are used to explain how the Earth's atmosphere changed?



The history of the atmosphere



What is the order of changes to the Earth's atmosphere?

- 1 Volcanoes release carbon dioxide and water vapour.
- 2 Water vapour condenses to form oceans.
- 3 Photosynthesis by plants and algae produces oxygen.
- 4 The atmosphere is mostly hydrogen and helium.
- 5 Carbon dioxide stored in fossil fuels is released.
- 6 Oxygen forms the ozone layer.
- 7 Levels of nitrogen in the atmosphere increase.

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