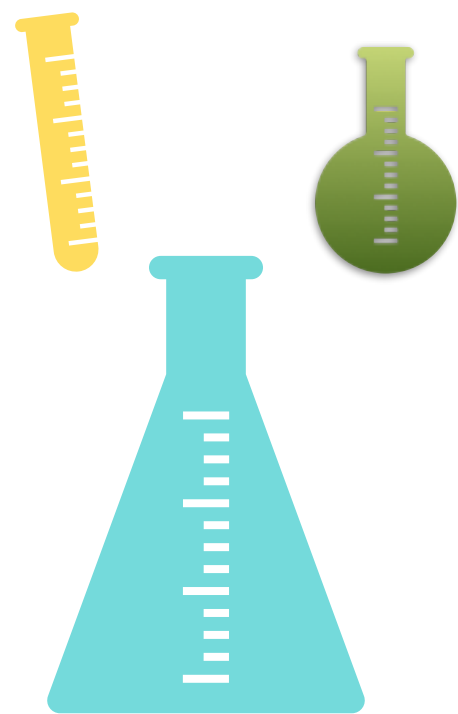


# Scientific Answers

## 1

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# Space

## Existence of Water on Mars

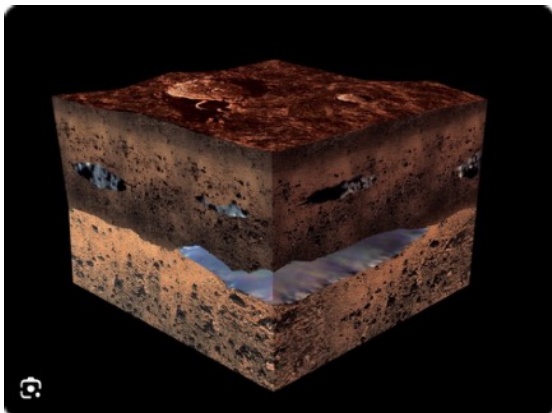
“Mars is a ‘terrestrial planet’ with a thin and sparse atmosphere, and a surface that combines the impact craters of the Moon with volcanoes, valleys, deserts, and the polar ice caps of Earth. It also appears to have periodically recurring ‘seasons of the year’.”

In July 2018, scientists from the Italian Space Agency reported that they had detected a subglacial lake on Mars, located 1.5 km beneath the south polar ice cap and extending 20 km horizontally. This was the first evidence of the existence of a stable body of liquid water on the planet.

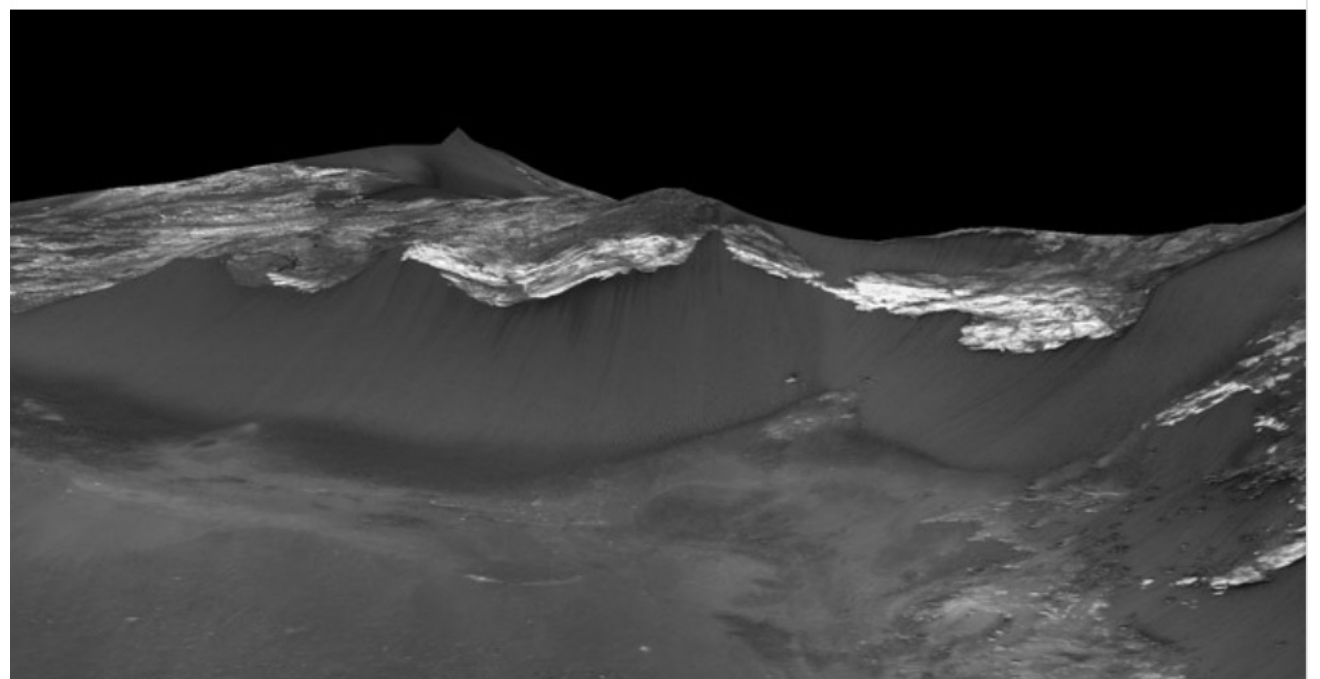
*Source: Wikipedia*



Protothema.gr



The subsurface of Mars.

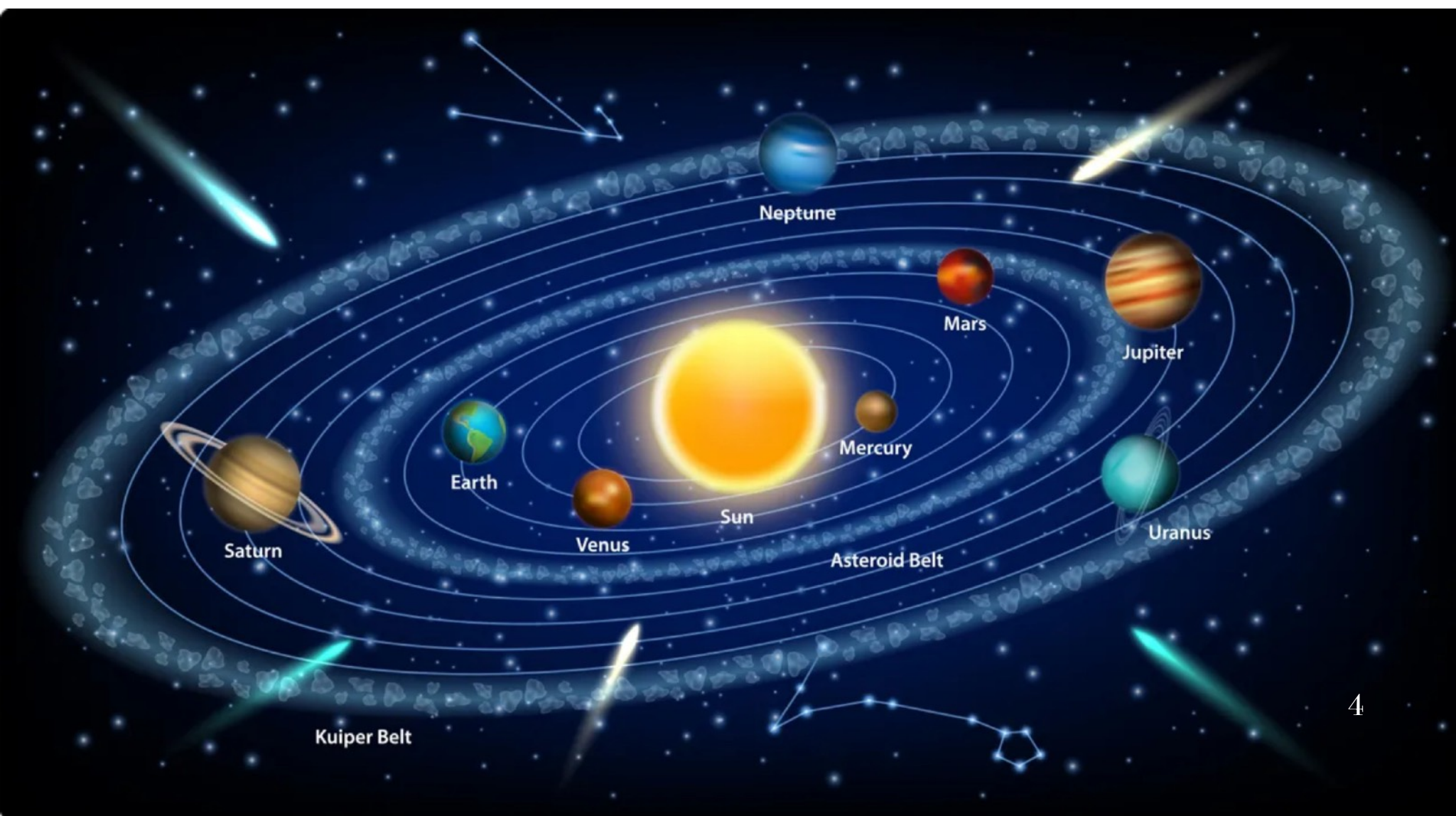


NASA: Βρέθηκε νερό στον Άρη!

There is water in Mars

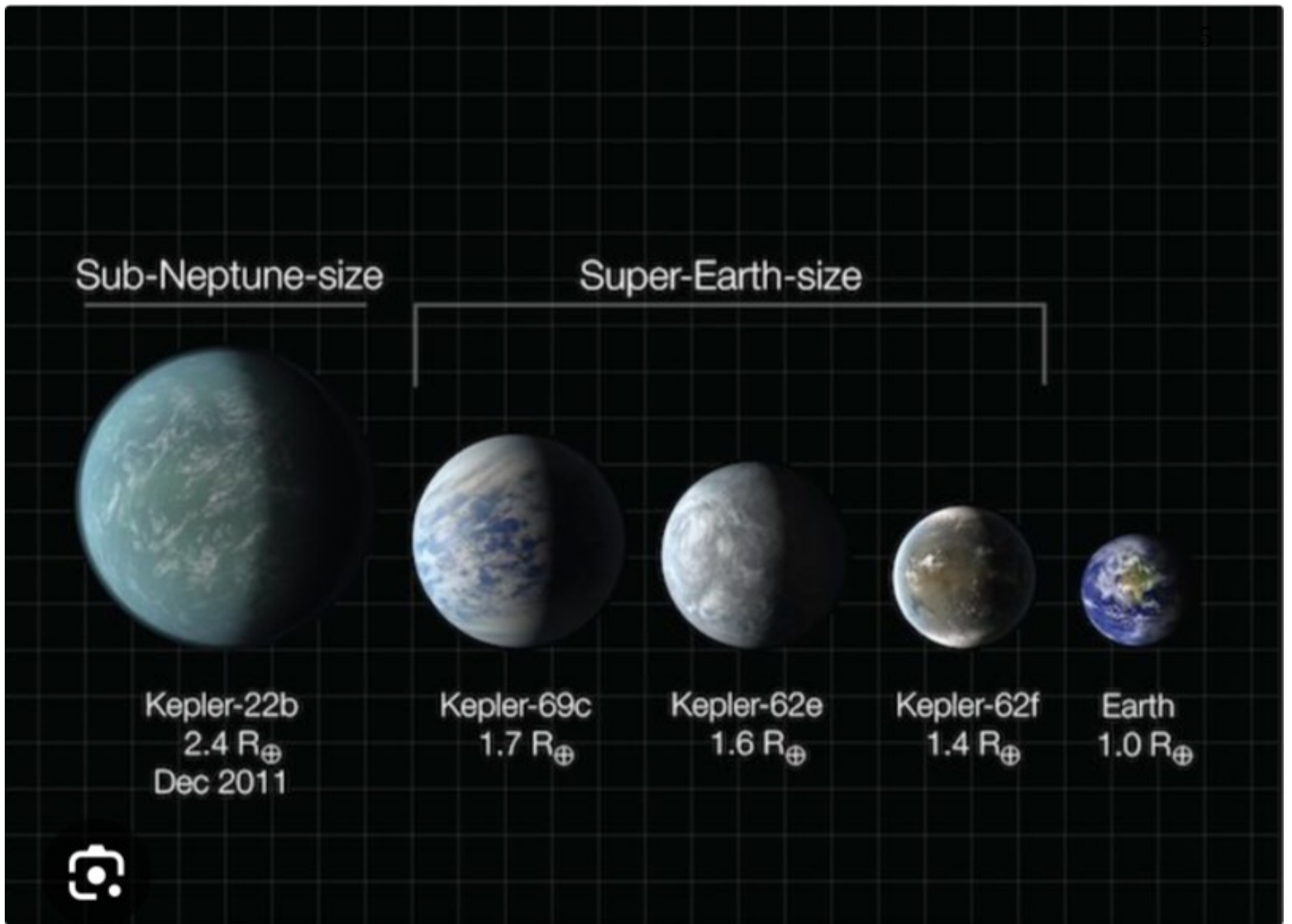
The NASA image of the surface of Mars.





## Exoplanets

The planets in the image above are highly likely to be habitable. In this image, you will see some of the 23 potentially habitable planets in the universe. These planets are Kepler-22b, Kepler-69c, Kepler-62e, Kepler-62f, and Earth, where we live. The planets with the highest chances of hosting life are Kepler-186f and Kepler-442.



# Planet earth



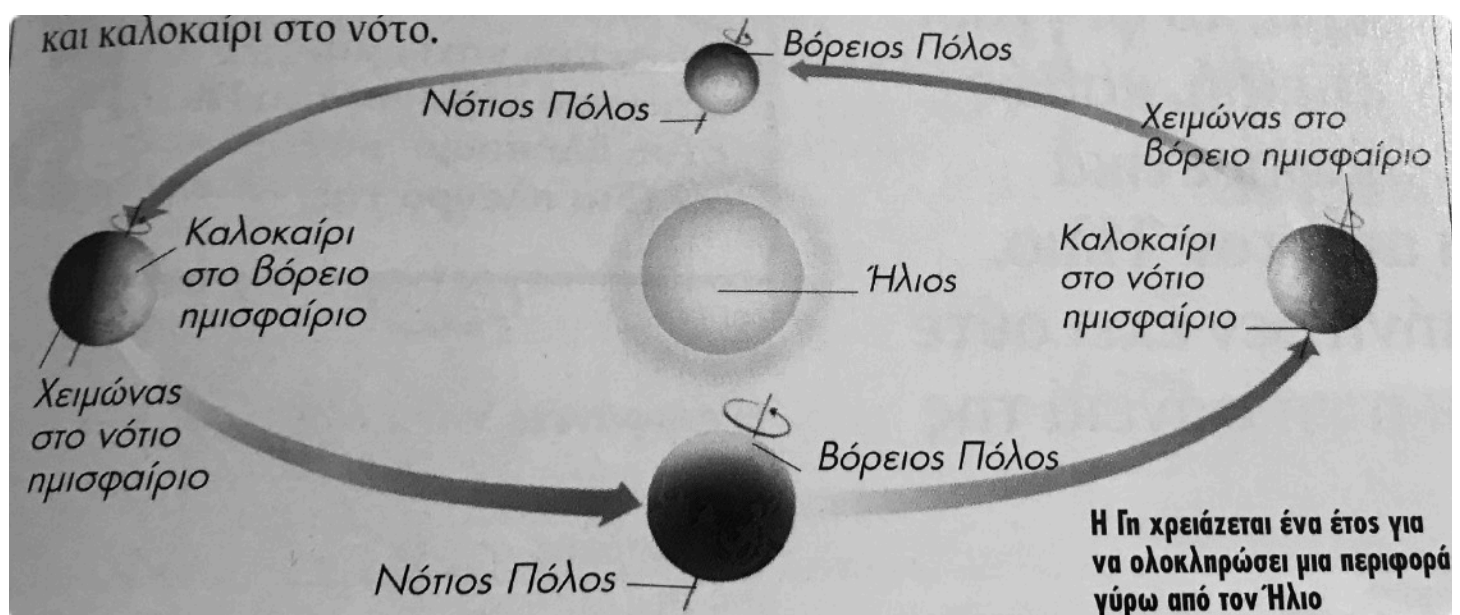
## Earth, the planet we live

The Earth weighs 5,970,000,000,000,000,000 tons. It is the third planet in position from the Sun. The exact distance of the Earth from the Sun is 149.6 million kilometers. Its gravitational acceleration is  $9.81 \text{ m/s}^2$ .

Earth is the third planet from the Sun and the only known planet to support life. It has a diameter of about 12,742 km (7,918 miles) and is composed of three main layers: the crust, mantle, and core. The atmosphere, primarily composed of nitrogen (78%) and oxygen (21%), plays a crucial role in sustaining life by protecting it from harmful radiation and helping regulate temperature.

Earth's surface is 71% water, mainly oceans, with continents and islands covering the remaining 29%. The planet has a variety of ecosystems and climates, from polar ice caps to tropical rainforests, which support a vast diversity of species.

The planet's gravity is strong enough to hold onto an atmosphere and maintain liquid water, which is essential for life as we know it. Earth also has a natural satellite, the Moon, which influences tides and has a stabilizing effect on the planet's axial tilt, helping maintain a relatively stable climate over long periods. Πηγή: εγκυκλοπαίδεια Disney διάστημα



# Mechanic

Our world would be different without the contribution of engineers and architects. Engineers construct machines and build bridges, roads, and dams. They also erect buildings, making the best possible use of space in combination with aesthetic appearance. Both architects and engineers need to understand the use of metals, rocks, and other materials to construct durable structures with proper functionality. The advancement in technology, such as the advent of steam, allowed them to experiment with new ideas.”





# Airplanes

The airplane is a motorized fixed-wing aircraft that is propelled forward by a jet engine or a propeller. There are airplanes of various sizes, designs, and wing configurations. The wide range of uses for airplanes includes recreation, the transportation of goods and people, the military, and research. Commercial aviation is a massive industry that involves flights carrying tens of thousands of passengers daily by airlines. Most airplanes are operated by a pilot, but there are some that are controlled remotely or by computer.

The Wright brothers invented and flew the first airplane in 1903, and were recognized as “the first to achieve sustained and controlled flight with a heavier-than-air power.” They built the airplane based on the designs of George Cayley, dating back to 1799, when he defined the concept of the modern airplane (and later successfully built and flew aircraft models and gliders). Between 1867 and 1896, the German aviation pioneer Otto Lilienthal studied heavier-than-air flight. Despite its limited use during World War I, aircraft technology continued to evolve. Airplanes played a role in all the major battles of World War II. The first jet aircraft was the German Heinkel He 178 in 1939. The first jet passenger airplane was the de Havilland Comet, which flew in 1952. The Boeing 707, the first widely successful commercial jet aircraft, was in use for over 50 years, from 1958 to 2013.

Πηγή: Wikipedia

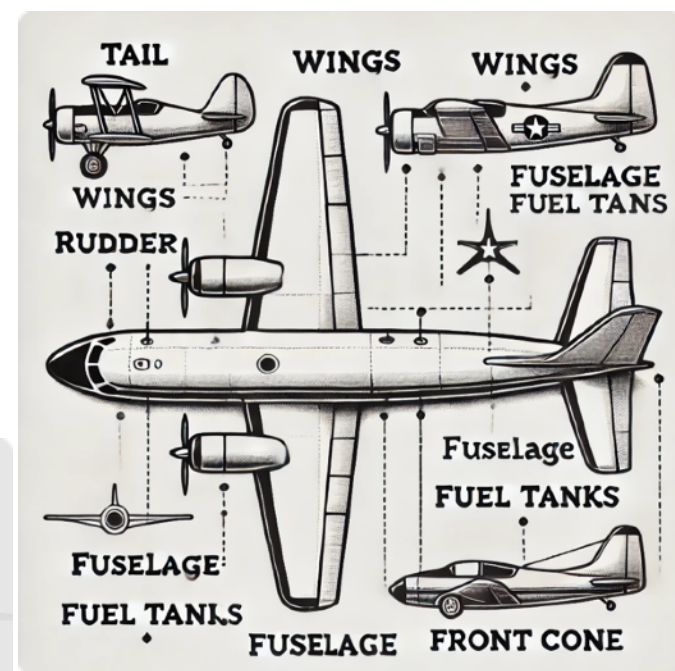
## Concord

*The Concorde was the fastest airplane in the world. It flew at 2,180 kilometers per hour (1,354 miles per hour). Two Concorde were built for takeoff. One had an airplane part attached to it. As soon as the pilot took off with the Concorde, he was unable to keep it in the air due to the attachment. It crashed into a hotel, resulting in the deaths of 113 people*

*Color your own airplane!*



The parts of an airplane



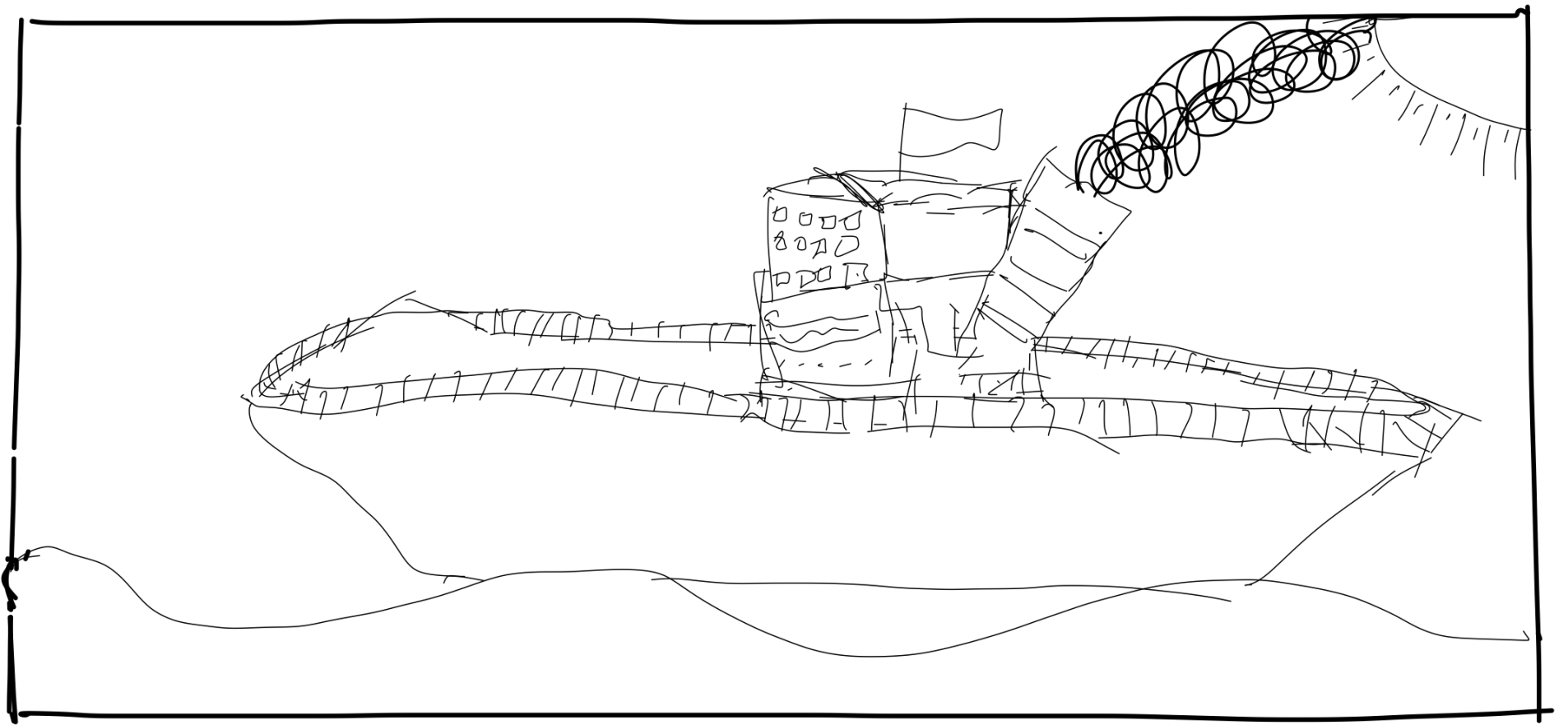


# Ships

The main body of the ship (hull) is divided into three parts: the front called the bow (fore), the middle and largest part called amidships (amid), and the rear part called the stern (aft).

The line around the ship where the surface of the sea exactly meets the ship, allowing it to sail safely, is called the waterline. All the visible parts of the ship above the waterline are called the freeboard, in contrast to the parts below the waterline, called the bottom. The curved surface from the freeboard towards the bow is called the bow flare, while its equivalent on the stern is called the quarter.

Color our ship!



# Environment's pollution

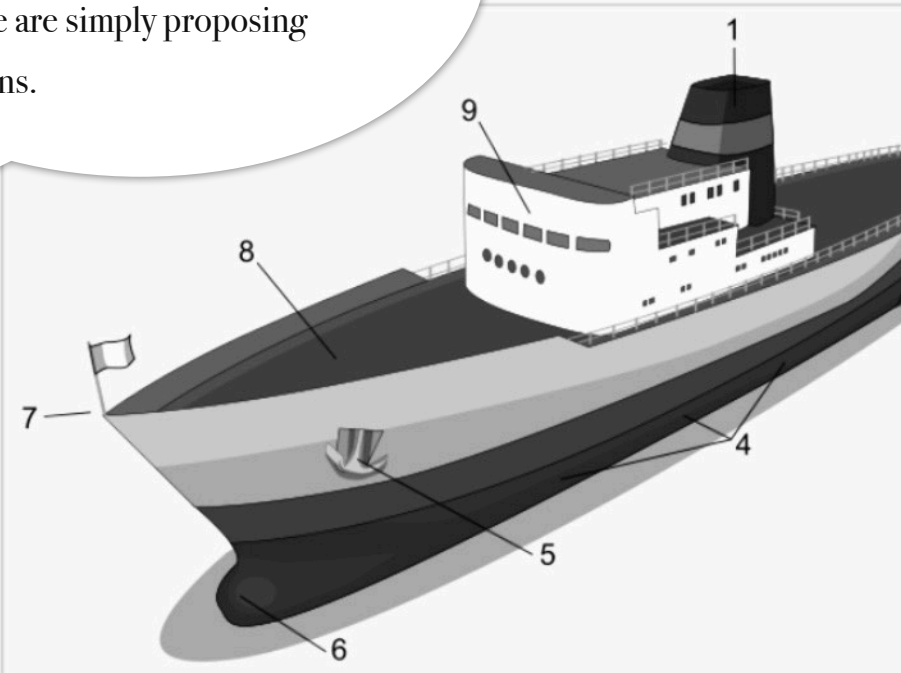
Polluting the environment is not right at all. Unfortunately, this happens very often. Some people throw trash everywhere, polluting the environment, the planet's heating is increasing more and more due to the exhaust fumes from cars and public transportation, and these are not the only bad things happening. In this section of the magazine, you will see various things about environmental pollution and different solutions to protect it.

Pollution is caused by us, humans, through our activities that produce exhaust gases and coal. These activities concentrate in certain areas just above the ground and puncture the ozone layer. The ozone is like a 'cellophane' that surrounds the Earth and 'throws' the right amount of heat (after absorbing it from the sun) to the Earth for humans and all other creatures to live. However, as mentioned above, through our activities (not all of them, of course), we puncture the ozone, and more sun rays enter than we need to survive. This raises the temperature and threatens humanity.

However, we can still save the environment with the following ways:

1. **First way:** RECYCLE things you don't need or juice bottles, a plastic bag, a broken container, and anything else you can.
2. **Second way:** PICK UP trash from the beaches.
3. **Third way:** DO NOT THROW TRASH on the beach and in other places.
4. **Fourth way:** *PICK UP the trash.*”

The fact that we write the solutions this way in this magazine DOES NOT mean that you MUST immediately go and do what we suggest. We are simply proposing solutions.



“Color the bins according to the colors they correspond to.”

“Environmental pollution is NOT a natural phenomenon. With the trash we throw, especially on the shores of the sea, the wind sweeps it and takes it to the seabed. The sea turtles, which are an endangered species, eat the plastic bags that float in the water, thinking they are jellyfish, and suffer from suffocation and die.” “All this trash has created in the Pacific Ocean an area with a large expanse of garbage, like an island made of trash. Let’s help stop this island from existing by recycling.”

12

1. recycling bin
2. “Here only peels and fruits”
3. Here only plastic”










# Quiz Time!

What do your answers reveal about you?

1. How much does the Earth weigh?




• 3,000,000,000,000,000,000 tons

• 5,970,000,000,000,000,000,000 tons
- 

2. What is your favorite geometric tool?

• Ruler




• Compass

• Protractor
- 

3. Why was the Concorde destroyed?

• Because a part from another airplane was stuck to it

• Because its construction was not good

• Because the pilot was clumsy
- 

4. What type of books do you read?

• Science fiction

• Mystery

• Adventure
- 




5. What describes you the most?

• Cunning




• Justice
- 

- Pride 

6. What is your favorite sport?

- Artistic/ rhythmic gymnastics 
- Soccer 
- None 

7. What is your favorite movie?

- Cinderella 
- I don't have a particular preference 
- Star Wars 

More 

You like simplicity. You don't need much to be happy. Sometimes this is good, other times it's indifferent. But if you want something more, don't hesitate to ask for it.

More 

You like precision. You are a bit of a perfectionist. You want to be accurate to avoid mistakes. It's not bad to make mistakes, but for some reason, you don't like it. If, however, you make a mistake or if you're the type who always gets straight A's in class and in a test you get an A- or 9 out of 10, don't be upset. It's not the end of the world!

More 

You love adventure. You get excited about new ideas, traveling, and anything new. However, sometimes you may get disappointed easily. Don't worry, it will pass with a new adventure!

Color this tree so that it is in front of the buildings and inside the park.

# SCIENTIFIC ANSWERS

## 1

Inside our magazine, you will find useful information about mechanics, space, and environmental pollution. You will also discover other things you didn't even know existed! Keep your answers in mind because there's a little quiz!