Hermetosphere Journal

Here I

(10/06/21 - 01/05/22)

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Data and Facts - Questions Part 1

- 1. What is a hermetosphere?
- 2. What does the word "hermetosphere" mean?
- 3. How does a hermetosphere generally need to be constructed?
- 4. What are suitable plants?

QUESTION 1

What is a hermetosphere?

A hermetosphere is a closed jar or container in which plants can be cultivated for a very long time, even decades.

QUESTION 2

What does the word "hermetosphere" mean?

The term "**hermetosphere**" is made up of the Latin word "**hermetic** (= closed)" and the Greek word "**spharia** (= cover)".

QUESTION 3

How does a hermetosphere generally need to be constructed?

The hermetosphere should be a container that has an airtight top, because nothing should penetrate or leave the glass. That would disrupt the biological cycle that will later develop.

The container that is used should be clean and dry in order for the plants to have good conditions to grow and spread.

First, washed lava pellets are placed in the jar and two or three suitable plants that have been cut to size beforehand are planted.

Then lava pellets are put into the container again before 8-10 woodlice are added.

At the end, one magnet is attached to the inside of the container and one outside. These are covered with felt sliders and serve to clean the glass because of the high humidity inside.

QUESTION 4

What are suitable plants?

All plants that can stand high humidity, because there will be a tropical climate in the jar. Basically, these plants include various flowering plants, ferns and mosses.



- 1. Wednesday, October 06, 2021
- 2. Wednesday, October 13, 2021
- 3. Wednesday, October 20, 2021
- 4. Wednesday, October 27, 2021
- 5. Summary October

WEDNESDAY \rightarrow OCTOBER 06, 2021

THE BEGINNING





Today I created a hermetosphere for the first time!

Still, the plants are very small, but hopefully I did everything right and they grow over the next few weeks.

All in all, I'm looking forward to see how my plants will develop! ©

WEDNESDAY \rightarrow OCTOBER 13, 2021

ONE WEEK LATER

This week I didn't make any pictures as the plants of my hermetosphere have not changed.

But next week I will continue the documentation.

WEDNESDAY \rightarrow OCTOBER 20, 2021

TWO WEEKS LATER

Now two weeks have passed. At the bottom of the glass you can see that water has deposited there.

You can see a pair of dried leaves that are dead.

The plants generally don't look so green and healthy as two weeks ago.

This is because the roots of the plants must first connect to the lava pellets. Through this process, they lose the energy they will later use to grow. This also explains why



some plant parts die: they do not get enough energy.

WEDNESDAY \rightarrow OCTOBER 27, 2021

THREE WEEKS LATER

Compared to last week, I can't really recognize differences, except for the dead plant parts and leaves that are almost no longer visible.

This is probably because they have been eaten by the woodlice. However, you can't see the little animals because they are nocturnal.

The plants should now carry out photosynthesis as well by converting carbon dioxide into sugar and oxygen with the help of light.

That is also the reason why I put my hermetosphere on my windowsill.

Cellular respiration should now also take place but at night. The process of cellular respiration



runs the other way round than the process of photosynthesis.

SUMMARY - OCTOBER

In the first month of the project, the plants in the hermetosphere had to get used to their **new habitat** first. They needed their entire **energy** and are therefore first collapsed instead of growing.

The woodlice have eaten the dead plant parts, which lead to a kind of "**order**" in the circulation.

In addition, there was a beginning of the occurrence of **photosynthesis** and **cellular respiration**.

As these two processes take place, the following picture as an illustration:





November

- 1. Wednesday, November 3rd, 2021
- 2. Wednesday, November 10, 2021
- 3. Wednesday, November 17, 2021
- 4. Wednesday, November 24, 2021
- 5. Summary November

WEDNESDAY \rightarrow NOVEMBER 3RD, 2021

FOUR WEEKS LATER

After four weeks, the plants seem to get used to the "life in the glass".

They've got a full green color and look much more stable than in the last week.

Besides, new stems and leaves have formed.

All in all, it's clear that the plants have recovered and now put their energy in their growth.



WEDNESDAY \rightarrow NOVEMBER 10, 2021

FIVE WEEKS LATER

The plants in my hermetosphere grow and grow! Today, it's Day 36!

I can watch the plants grow every day; every morning they look different than the day before. That's really exciting!

In my opinion, their color has become a little lighter than at the beginning, which is maybe caused by the occurrence of photosynthesis.



WEDNESDAY \rightarrow NOVEMBER 17, 2021

SIX WEEKS LATER



Also this week you can see that the plants have grown further!



WEDNESDAY \rightarrow NOVEMBER 24, 2021

SEVEN WEEKS LATER

Let's have a look at my hermetosphere:

As you can see, the plants have grown a little bit again.

You can clearly see a few water drops on the glass wall. I explain why these arise in the summary.



SUMMARY - NOVEMBER

After around two months, the plants have turned into a lighter green color than when I planted them, which is caused by the photosynthesis.

You can clearly see a growth spurt that is related to the fact that the plants now have more and more energy to carry out photosynthesis and cellular respiration.

The water that is deposited on the glass wall and on the bottom of the glass comes from the tropical climate inside of the jar and from cellular respiration, which also creates water.

The water is then used, for example, to prevent the plants from drying out and to carry out photosynthesis.