

# PROJECT BIOSPHERE 3

---



## Introduction

You are a group of scientists, consisting of: a botanist, a meteorologist, an ecologist, and a doctor. You are approached by a private organization to conduct a project, **PROJECT BIOSPHERE 3**. There is only one problem none of you have ever heard of project Biosphere 1 or 2. The good thing is that all funding for the project will be donated by a sponsor, who is interested in seeing what you can accomplish. You can have whatever materials you need to accomplish your task. You can go anywhere you want to make your Biosphere. You can bring any person onto your team you feel you need to accomplish your task.

## The Task

In order for you to proceed with Project Biosphere 3, first you must find out what biosphere 1 and project Biosphere 2 are or were. Then present your findings to your sponsor and the private organization. Your presentation should include what the first two Biospheres are/were, your conclusions on what needs to be changed or what should be done the same in Project Biosphere 3. Your presentation should also include how you want to build your Biosphere, a rough design of what your biosphere will look like, what you want to have in your Biosphere, (plants, animals, etc) and how long you want to conduct you experiment for. The sponsor and sponsor organization will then approve the necessary funding you think you need.

## The Process

First you'll be assigned to a research team of 4 scientists.

Decide who will play the part of each of the four scientists.

As a group you will find out a general overview of what Biosphere 1 and Project Biosphere 2 are/were.

Then you will research the individual aspects of Biosphere 1 and 2.

- **The Botanist** should look at the plants found in the two previous biospheres and decide which plants you should have in Biosphere 3.
- **The Meteorologist** should look at the weather patterns of the two previous Biospheres, how it was caused, and then formulate an idea how they can get these weather patterns in Project Biosphere 3.
- **The Ecologist** should look at the ecosystems and layout of the first two Biospheres and decide how their Biosphere will look on the inside.

- **The Doctor** should look at the diet for the group. What will be consumed for the duration of your experiment? How will you store food? What will you do if you run out of food? What will your living quarters look like? Also you should look at the medical part of the procedure. What are possible viruses that you can come in contact with during the project? What will you do if someone gets sick?

Be sure to look at the design and prepare a rough design on how it will look once constructed. Each member of your group should present their findings to the other scientists. As the other scientists present their findings, estimate the funding that will be required to adequately perform the desired task outlined in the presentation.

Once all have presented, discuss what you need to change from the previous 2 biosphere projects. Discuss how you can incorporate your findings together to make Project Biosphere 3 a success. Prepare a report on what you are going to do for Project Biosphere 3 to be presented to the project final sponsor and sponsor organization. Design your final plan for Biosphere 3. Present your findings to the rest of the class. This can be done with either PowerPoint or a flip chart style presentation.

## Web sources

Here are some good sources that any of the scientists can use

<http://www.biospheres.com/> A well done webpage chronicling the project. There are links to information that could be useful to you in your research.

<http://www.biospheres.com/biosphere2.html> This is a page with the reports of Biosphere 2.

<http://www.tnh.unh.edu/Issues/030497/News/poynter.html> An interview with one of the researchers of Biosphere 2.

[http://www.bio2.edu/press\\_rels/two\\_offset.htm](http://www.bio2.edu/press_rels/two_offset.htm) The press release from Columbia University on the project.

<http://www.biospheretechnologies.com/> This is a general overview of what the Biosphere project is about. Not necessarily to design one, but why they are important.

<http://www.bio2.edu/> The official web page from Columbia University about Project Biosphere 2.

<http://www.desertusa.com/mag99/apr/stories/bios2.html> This is a web page with a brief overview of the project.

<http://www.permanent.com/s-bio2m1.htm> This source is a general overview of the project, what happened, what the purpose was etc. Anyone could use this if they wanted.

<http://www.bio2.edu/Research/index.htm> This is the official Biosphere 2 overview website.

<http://www.biospherics.org/bio2press.html> This is the page with links to all aspects of Biosphere 2. Choose the ones you want to visit.

<http://www-ang.kfunigraz.ac.at/~hinghofe/Bio-2.htm> This is an overview from someone who was not involved in the project itself, but it is objective.

<http://www.bio2.edu/> The official web page from Columbia University about Project Biosphere 2.

### **Ecologist:**

<http://www.biospherics.org/bio2press.html> This is the page with links to all aspects of Biosphere 2. Choose the ones you want to visit.

<http://www.bio2.edu/> The official web page from Columbia University about Project Biosphere 2.

### **Meteorologist:**

<http://www.biospherics.org/bio2press.html> This is the page with links to all aspects of Biosphere 2. Choose the ones you want to visit.

[http://www.agu.org/eos\\_elec/99148e.html](http://www.agu.org/eos_elec/99148e.html) Talks about the climate that can happen in the world. This is good for designing how the ecology could be set up.

<http://www.bio2.edu/> The official web page from Columbia University about Project Biosphere 2.

**Botanist:**

<http://www.biospherics.org/bio2press.html> This is the page with links to all aspects of Biosphere 2. Choose the ones you want to visit.

<http://www.bio2.edu/> The official web page from Columbia University about Project Biosphere 2.

**Doctor:**

<http://www.permanent.com/s-bio2m1.htm> This source is a general overview of the project, what happened, what the purpose was etc. Anyone could use this if they wanted.

<http://www.biospherics.org/bio2press.html> This is the page with links to all aspects of Biosphere 2. Choose the ones you want to visit.

<http://www.bio2.edu/> The official web page from Columbia University about Project Biosphere 2.

<http://www.nal.usda.gov:8001/py/pmap.htm> A guide to nutrition to help in the planning of meals.

As you are working, answer the following questions as you go to ensure that you are staying on task. They will also help you to evaluate how you are working together, and see where changes should be made to insure that you complete this assignment in the allotted time.

1. Does everyone have a job, and do you know what you do?
2. Do you know what biosphere 1 and project Biosphere 2 is?
3. Does everyone have their assignment?
4. What happened in Biosphere 1 and 2?
5. What will I do to make it better?
6. Am I prepared to present my findings to the other researchers?
7. Are we prepared to present our proposal to the sponsor and Sponsor organization?

As you prepare your report, think of what happened in Biosphere 1 and project Biosphere 2, and how you would overcome these obstacles or problems. What would you do the same? What would you do different? Why is your plan better?

## Evaluation

---

### Group Rubric

	<b>Beginning</b>	<b>Developing</b>	<b>Accomplished</b>	<b>Exemplary</b>	<b>Score</b>
Did we work together as a group?	Everyone worked alone	We worked together part of the time	We worked together most of the time	Everyone put forth the same amount of effort the entire time	
Was our presentation organized?	No organization	Little organization	Mostly Organized	Completely organized	
Did everyone participate in the presentation?	One person spoke the whole time	A couple of people spoke	Most of the group spoke	Everyone did their part	
Did we all make the final decision?	One person made all of the decisions	Two people made the decision	Most of the group made the final decision	It was a complete group decision on the final project	
Was our decision logical and possible?	No logic not possible	Some logic possibly possible	Mostly logical most likely possible	Very logical Very possible	
Is our design original and workable?	Not original, non workable	Some originality, possibly workable	Mostly original, most likely possible	Very original, Very possible	
Were the findings accurate?	No accuracy	Some accuracy	Mostly accurate	Completely accurate	
Do our changes make sense?	No sense	Little Sense	Good Ideas	Great ideas	
Spelling and Grammar?	9 or more mistakes	6-8 mistakes	3-5 mistakes	0-2 mistakes	

## SELF RUBRIC

	<b>Beginning</b>	<b>Developing</b>	<b>Accomplished</b>	<b>Exemplary</b>	<b>Score</b>
Did I do my assigned task?	I did nothing of my assigned work	I did some of my assigned work	I did most of my assigned work	I did all of my assigned work	
Was I prepared for my individual presentation?	I did no preparation	I did some preparation	I got most of my information	I was completely informed in my area.	
Did I take part equally in the group?	I contributed nothing	I contributed some	I contributed a lot	I contributed my equal share	
Did I use the provided sources?	I found my own sources	I used one of my sources	I used two sources	I used all three sources	