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## UNIT II

### COLONIZING THE MOON

The first step in colonizing the moon would be to find a suitable place to live. The moon has a diameter of about 3,476 miles and a circumference of about 10,924 miles. The surface area of the moon is approximately 16,796,000 square miles. The moon's gravity is about one-sixth that of the earth. The temperature range on the moon is from -120 to +150 degrees Centigrade. There are no rivers or lakes on the moon.

There is little scientific speculation about living on the moon. What man will do on the moon surface is still not determined. But experts believe that colonization will take place in three steps. First, there will be increasing periods of exploration and temporary shelters. These periods will be followed by longer stays with houses under the surface of the moon and systems necessary to support life brought by the colonizers themselves. Finally, colonies that are ecological and economically self-sustaining will be established.

The principal job of the early settlers will be to stay alive. They will have to build shelters to maintain an atmosphere like that of earth. They will have to plant crops under huge domes to protect them from the sun and other sources. After this is done, the settlers will have time to engage in all kinds of commercial development and to make discoveries in science.

## UNIT II

The characteristics of the moon that make it bad for human survival may make it ideal for certain kinds of manufacturing. Operations that require a vacuum, extreme cold, or sterility are an example. Precision ball bearings, industrial diamonds, or pharmaceuticals might be produced on the moon.

The most immediate interest in the moon, however, is a scientific one. Geologists can explore the history and composition of the satellite. Meteorologists will have opportunities to forecast weather on the moon. Cosmologists can study the origin of the solar system. Astronomers can use the optical telescopes and radiotelescopes free of atmospheric and man-made disturbances. And perhaps at some distant date the moon can serve as a base from which space vehicles can travel to other planets in earth's solar system and to worlds beyond.

## II. 1. READING.

### MOON COLONY.

The next great land area that man hopes to colonize is the moon. In size it is nearly equal to the area of North and South America. However, it presents a hostile environment. Temperatures range from + 120 to — 150 degrees Centigrade. There is no air, no water.

Today is considerable scientific speculation about living on the moon. When man will begin life on the lunar surface is still not determined. But experts believe that colonization will take place in three steps. First, there will be increasing periods of exploration with temporary shelters. These periods will be followed by longer stays with housing under the surface of the moon and systems necessary to support life brought by the colonizers themselves. Finally, colonies that are ecologically and economically self-sustaining will be established.

The principal job of the early settlers will be to stay alive. They will have to build shelters to maintain an atmosphere like that of earth. They will have to plant crops under huge domes to produce food and oxygen and find water sources. After this is done, the settlers will have time to explore the possibilities of commercial development and to make discoveries important to science.

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The most immediate interest in the moon, however, is a scientific one. Geologists can explore the history and composition of the satellite. Meteorologists will have opportunities to forecast weather on earth. Cosmologists can study the origin of the solar system. Astronomers can use their optical telescopes and radiotelescopes free of atmospheric and man-made distortions. And perhaps at some distant date the moon can serve as a base from which space explorers can travel to other planets in earth's solar system and to worlds beyond.

OBJETIVO: El alumno, de acuerdo con estructuras gramaticales aprendidas con anterioridad comprenderá la información que presenta la lectura: "Colonia Lunar".

## VOCABULARY

## **NOUNS**

- |                     |                                       |
|---------------------|---------------------------------------|
| 1. astronomer       | - astrónomo.                          |
| 2. atmosphere       | - atmósfera.                          |
| 3. ball bearing     | - rodamientos.                        |
| 4. cold             | - frío.                               |
| 5. colonizers       | - colonizadores.                      |
| 6. cosmologists     | - cosmólogos.                         |
| 7. crops            | - cosechas, sembrados.                |
| 8. development      | - desarrollo.                         |
| 9. discoveries      | - descubrimientos.                    |
| 10. distortions     | - distorsiones.                       |
| 11. domes           | - cúpula.                             |
| 12. environment     | - medio ambiente.                     |
| 13. sterility       | - esterilidad.                        |
| 14. explorers       | - exploradores.                       |
| 15. geologists      | - geólogos.                           |
| 16. job             | - trabajo.                            |
| 17. kinds           | - tipos, clases.                      |
| 18. manufacturing   | - manufacturas.                       |
| 19. meteorologists  | - metereólogos.                       |
| 20. pharmaceuticals | - productos farmacéuticos.            |
| 21. range           | - poner en posición, vasta extensión. |
| 22. size            | - tamaño.                             |
| 23. satellite       | - satélite.                           |
| 24. settlers        | - colonizadores.                      |
| 25. shelters        | - refugios.                           |
| 26. sources         | - fuentes.                            |
| 27. speculation     | - especulación.                       |
| 28. steps           | - pasos, etapas.                      |
| 29. vacuum          | - vacío.                              |
| 30. survival        | - sobrevivencia.                      |
| 31. surface         | - superficie.                         |
| 32. weather         | - clima.                              |

## **ADJECTIVES**

1. alive - vivo.

## VERBS

- |                   |                          |
|-------------------|--------------------------|
| 1. to believe     | - creer.                 |
| 2. to bring       | - traer.                 |
| 3. to build       | - construir.             |
| 4. to colonize    | - colonizar.             |
| 5. to do          | - hacer.                 |
| 6. to establish   | - establecer.            |
| 7. to find        | - encontrar.             |
| 8. to forecast    | - pronosticar.           |
| 9. to increase    | - incrementar.           |
| 10. to make       | - hacer.                 |
| 11. to maintain   | - mantener.              |
| 12. to plant      | - plantar, sembrar.      |
| 13. to produce    | - producir.              |
| 14. to serve      | - servir.                |
| 15. to stay       | - quedar-se, permanecer. |
| 16. to support    | - soportar, aguantar.    |
| 17. to take place | - llevar a cabo.         |
| 18. to travel     | - viajar.                |

### OTHER WORDS

1. beyond	- más allá de.
2. but	- pero.
3. ecologically	- ecológicamente.
4. economically	- económicamente.
5. however	- sin embargo.
6. man-made	- hecho por el hombre.
7. nearly	- cerca de, casi.
8. perhaps	- quizá.
9. self-sustaining	- independiente, auto-mantenido.

## **OTHER WORDS**

- |                 |                                  |
|-----------------|----------------------------------|
| beyond          | - más allá de.                   |
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| however         | - sin embargo.                   |
| man-made        | - hecho por el hombre.           |
| nearly          | - cerca de, casi.                |
| perhaps         | - quizá.                         |
| self-sustaining | - independiente, auto-mantenido. |

**OBJETIVO:** El alumno, para demostrar el grado de comprensión alcanzado sobre la lectura: "Colonia Lunar", será capaz de traducirla al español.

II. 1.1. Translate to Spanish the reading: "Moon colony"

COMPREHENSION EXERCISES

II. 1.2. Briefly answer in Spanish the following questions according to the reading:  
"Moon colony".

1. Where does man desire to construct a colony?
2. When will life begin on the surface of the moon?
3. What will the principal work of the first colonizers be?
4. What do the cosmologists think they can do on the moon?
5. What way will the meteorologists be benefited by?

II. 1.3. Choose the corresponding letter to the correct answer and place it in the parenthesis. ( )

1. What are the temperatures on the moon? .... ( )
  - a) They vary from + 50° to — 60°C.
  - b) They vary from + 120° to — 150°C.
  - c) They vary from + 150° to — 200°C.
2. How many phases do the scientists think will be necessary to colonize the moon?
  - a) Five steps.
  - b) Six steps.
  - c) Three steps.
3. What reason must the first colonizers construct shelters for? .... ( )
  - a) To protect themselves of the cold.
  - b) To sleep without worry.
  - c) To maintain an atmosphere like that of earth.
4. What will moon colonists have to do in order to survive? .... ( )
  - a) They will have to look for gold and diamonds.
  - b) They will have to produce industries and factories.
  - c) They will have to plant crops, to produce food and oxygen and find water sources.
5. What can astrologists use with all liberty? .... ( )
  - a) Their optical telescopes and radiotelescopes.
  - b) Their rockets and space equipment.
  - c) Their food and medicines.

OBJETIVO: El alumno, respondiendo, por escrito a los ejercicios comprobará el grado de comprensión alcanzado sobre la lectura: "Colonia Lunar".

II. 1.4. Write true (T) or false (F) in the following sentences.

1. The moon is nearly equal in size to the area of North and South America. \_\_\_\_\_
2. The main job of early settlers on the moon will be to explore the area for oil, gold, and silver. \_\_\_\_\_
3. The atmosphere of the moon has no air. \_\_\_\_\_
4. A colony in the moon could help meteorologists forecast the weather on earth. \_\_\_\_\_
5. The pleasant temperatures on the moon will make human survival relatively easy. \_\_\_\_\_

II. 1.5. Relate both columns inserting the number that corresponds.

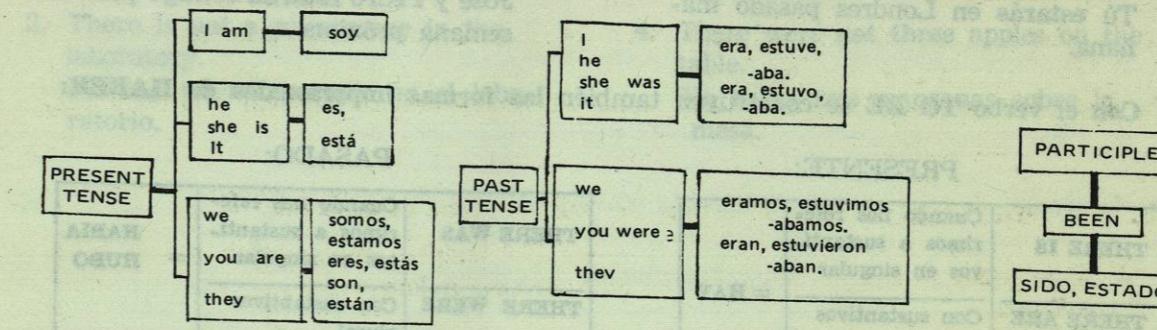
- |                 |  |
|-----------------|--|
| 1. Aluminium    | ( ) A smaller body in space which moves in a path around a larger one.     |
| 2. Balloon      | ( ) A specialist in the study of heavenly bodies.                          |
| 3. Colonize     | ( ) To make larger.  |
| 4. Astronomer   | ( ) A light silver-white metal much used in combination with other metals. |
| 5. Solar system | ( ) To establish a colony.   |
| 6. Expand       |  |
| 7. Optical      |  |
| 8. Telescope    |  |
| 9. Satellite    |  |
| 10. Dome        |  |

**OBJETIVO:** El alumno, reconocerá las funciones de TO BE como verbo activo y en la construcción de las formas impersonales de haber.

II. 2. GRAMMATICAL SUMMARY.

A) EL VERBO TO BE.

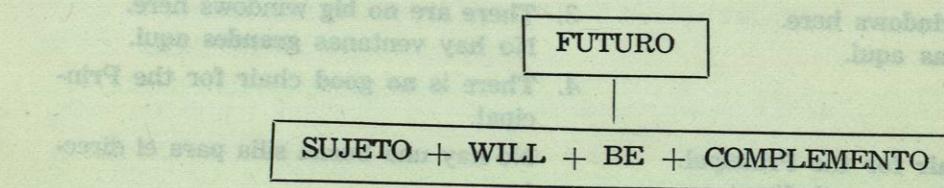
TO BE = SER, ESTAR. Es uno de los verbos ingleses que, al igual que en español, presenta muchas variantes en su conjugación. Vamos a recordarla:



examples:

1. Christian Barnard **is** a cardiologist.  
Christian Barnard **es** un cardiólogo.
2. The hindus **are** in misery.  
Los hindúes **están** en la miseria.
3. I **am** a specialist of Educational Technology.  
**Soy** una especialista en tecnología educativa.
4. The U.S.A. and Canada **are** border countries.  
Los U.S.A. y Canadá **son** países fronterizos.
5. Marilyn Monroe **was** a very beautiful woman.  
Marilyn Monroe **fue** una mujer muy bella.
6. Richard and Ulla **were** in London last year.  
Richard y Ulla **estuvieron** en Londres el año pasado.

- **La formación del tiempo futuro simple** la construimos con el auxiliar **WILL** antepuesto a la forma **BE**.



- I will be rich in a few years.  
Seré rico en pocos años.

- You will be in London the day after tomorrow.  
Tú estarás en Londres pasado mañana.

- Con el verbo **TO BE** se construyen también las formas impersonales de **HABER**:

**PRESENTE:**

THERE IS	Cuando nos referimos a sustantivos en singular	= HAY
THERE ARE	Con sustantivos plural	

**PASADO:**

THERE WAS	Cuando nos referimos a sustantivos en singular	= HABIA
THERE WERE	Con sustantivos plural	= HUBO

examples:

- There are many books in the library.  
Hay muchos libros en la biblioteca.
- There is a microscope in the laboratory.  
Hay un microscopio en el laboratorio.

- La negación en las formas impersonales de haber se construye agregándoles la partícula **NO** o **NOT** después del auxiliar **TO BE**.

- Usamos **NO** antes de un **sustantivo** o antes de un **adjetivo** seguido de un **sustantivo**.

examples:

- There are no windows here.  
No hay ventanas aquí.
- There is no chair for the Principal.  
No hay una silla para el director.
- There are no big windows here.  
No hay ventanas grandes aquí.
- There is no good chair for the Principal.  
No hay una buena silla para el director.

- Usamos **NOT** antes de otras palabras.  
examples:

- There are not many books in the library.  
No hay muchos libros en la biblioteca.
- There is not a microscope in the laboratory.  
No hay un microscopio en el laboratorio.
- There was not a big yard in the school.  
No había un patio grande en la escuela.
- There were not three apples on the table.  
No había tres manzanas sobre la mesa.