LUNA MARIS

Ricardo Amaral

Coordinator's Rulebook

meeplebr

GLYPTODON

Introduction

Space exploration saw exponential advances through the beginning of the 21st century as private corporations and world governments forged their plans for the next giant leap for humankind. Experts in various areas agree that the first step to branch out this is to stake claim on the Moon. Competing corporations have already started mining the Moon's resources, one of which has hired you to lead a team of scientists. You must work towards building a sustainable lunar colony while simultaneously extracting the valuable resources found on the Moon and sending them back to Earth.

Living in space is not an easy task, however. For this reason, we have created this coordinator's manual, which we believe will drastically increase your chances of success. After a few months, the choices made by each team coordinator will be evaluated and the most efficient methodology will be documented and replicated in future Lunar bases, giving you worldwide recognition for your accomplishments.

Are you ready to leave your mark and see your name immortalized in the history books?

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ACKNOWLEDGMENTS

Thanks to all those who contributed with their valuable suggestions and comments, especially during playtesting, in alphabetical order:

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Anderson Frazão
Antônio de Marchi Nammur
Caio Calado
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OVERVIEW

In LUNA MARIS, you are the coordinator of a team of scientists whose mission is to begin mining on the Moon. Each player is hired by one of the lucky companies that have received a permit to extract the Moon's natural resources and send them back to Earth, while ensuring the sustainable development of the lunar colony. A third-party organization will be hired by the investors of the companies to determine which coordinator has performed the best (obtained the most victory points).

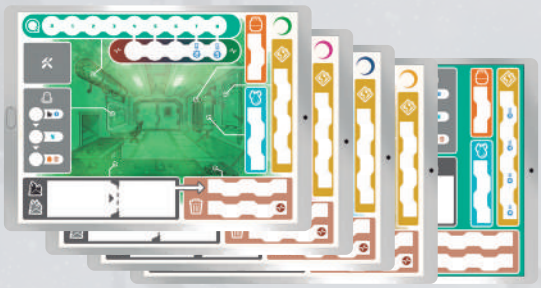
Your mission ends after 2.5 lunar days (5 rounds), when the investors arrive at the lunar colony to supervise the evaluation of each coordinator's performance. The strategy that showed the best outcome will be sold to the other investors and will be used for future extraterrestrial mining operations alongside the coordinator's name, immortalized in the history of spacefaring.

Did you know?

One lunar day is equal to approximately 27 Earth days.
This is due to the Moon's rotation being similar to the speed of its orbit. This means that a location on the Moon's equator sees almost 2 weeks of daytime before being plunged into 2 weeks of darkness.

Components

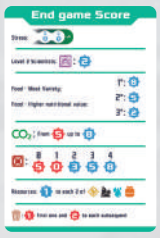
1 Main Game Board



4 Player Boards (1 of each color) and 1 AI Board (Solo Mode)

30 Order Tiles

1 Advanced Sustainability Research Tile



5 Summary Cards (1 for Solo Mode)

36 Food Cards

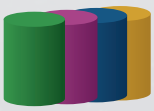
24 level 1 Scientist Cards (6 of each color) and 16 level 2 Scientist Cards

8 Advanced Module Tiles

4 Astronauts

7 Special Equipment Tiles

12 AI Cards (Solo Mode)



16 Probes (4 of each color)

4 O_2 Markers and 4 Stress Markers

36 Discs (9 of each color)

28 Energy

20 Water

12 Helium-3

16 Titanium

40 Iron / Waste

GAME SETUP

1. Place the main Game Board in the center of the table.

2. Each player must choose a color and place a disc of their chosen color at position 5 of the board's number track.

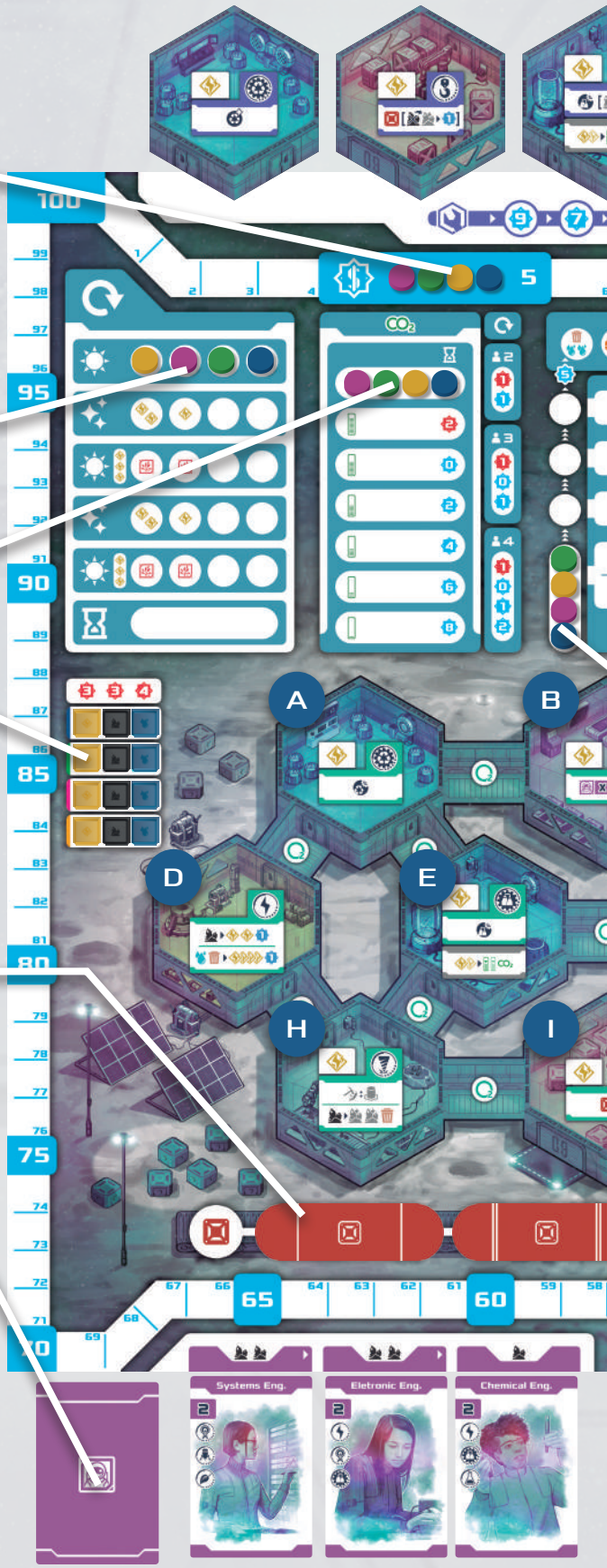
3. Determine the First Player: the person who has most recently looked at the Moon plays first. The First Player must place a disc of their color at position 1 on the first line of the turn order track. Other players then place their discs in clockwise order.

4. Each player must place a disc of their color on the first space of the CO_2 track.

5. Each player must place 1 Energy cube, 1 Water cube, and 1 Iron cube on the corresponding spaces for their color in the Emergency Depot.

6. Separate the Order tiles by the number of lines on the back (varying from 1 | to 4 ||||) and shuffle them. Then take a number of tiles one more than the number of players. Return unused Order tiles to the game box. For example, for a 3-player game, 4 tokens from each type are drawn at random and placed face-down in a stack on the indicated locations of the main game board, in the Shipping Dock. Then, flip over the top tile of each stack.

7. Shuffle the level 2 scientist cards (purple) and place them face-down in a pile on the indicated location. Draw the top three cards and place them face-up to form the hiring board.



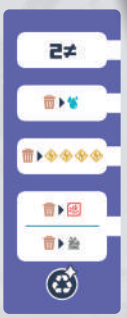
Modules Index

A. Recycling Facility (p. 22)
B. Sleeping Quarters (p. 23)
C. Laboratory (p. 19)
D. Power Plants (p. 22)
E. Industrial Complex (p. 20)
F. Comms Room (p. 18)
G. Airlock (p. 17)
H. Mining Station (p. 22)
I. Shipping Dock (p. 18)
J. Greenhouse (p. 23)

8. Shuffle the 8 advanced module tiles, draw 5 at random, and place them face-up on the spaces corresponding to the project area. Return the unused tiles to the game box.

9. Randomly place one probe of each player's color on one of the starting spaces in the mining area (as indicated by the number of current players) to mark that player's first mining probe.

For games with 2 or 3 players, use discs from an unused color to cover the titanium mines along the center (as marked by the number of current players). One mine is covered in a 3-player game and 2 mines in a 2-player game. These mines are inaccessible during the game.



10. Place the Energy, Iron, Titanium, Water, and Helium-3 cubes in a common supply within reach of all players.

These resources are not limited to the number of cubes. If at any point during the game a resource runs out of cubes, you can use something else to substitute them.

11. Each player must place a disc of their color at the start of the Extraction and Sustainability Research tracks. Place the advanced sustainability research tile next to the game board.

12. Shuffle the Food cards based on the number of players. A 2-player game only uses cards with no marking, a 3-player game adds cards with 3+, and a 4-player game uses all cards. Place the shuffled cards face-down in a stack on the indicated location on the game board. Draw 3 cards and place them face-up in the Seedbeds.

SETTING UP THE PLAYER BOARD

1. Place the player board of your color in front of you. Take the remaining components of your color: 1 astronaut, 4 discs, 3 probes and 2 special markers.

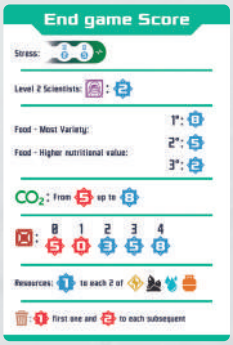
2. Place a disc on the stress track underneath position 6. This is your stress marker.

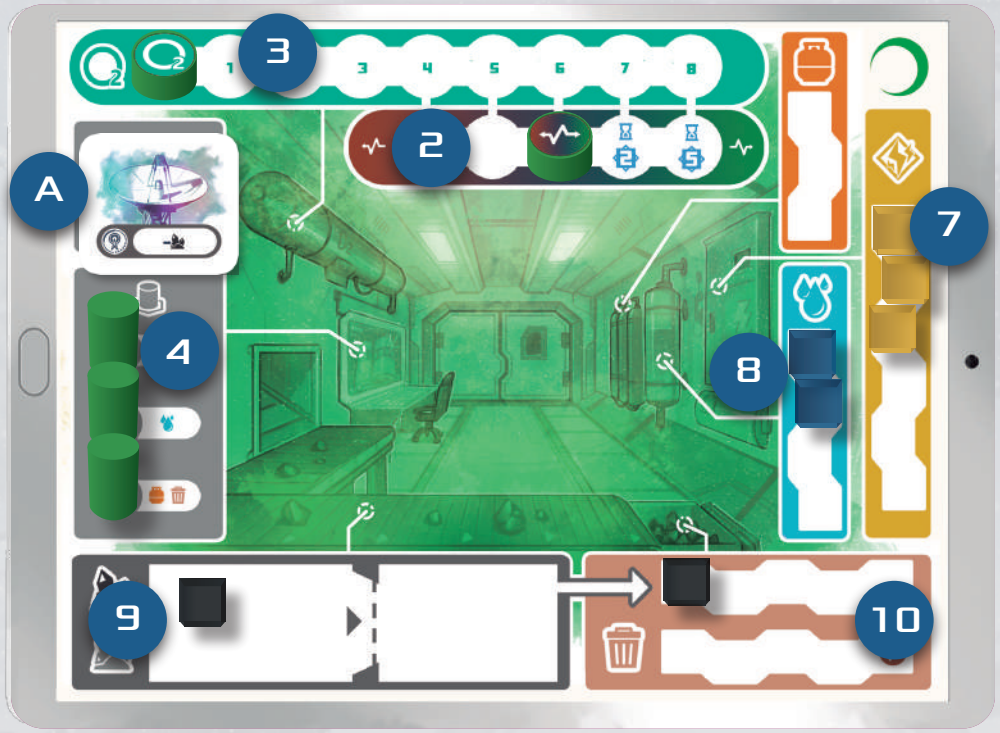
3. Place another disc on position 0 on the oxygen consumption track. This is your oxygen consumption marker.

4. Place 3 probes on their specified locations.

5. The 4 remaining discs and your astronaut should be placed next to your player board.

6. Take the 6 starting scientist cards of your color to form your hand and place the summary card near your player board.





7. Place 3 yellow cubes (Energy) on your battery.

8. Place 2 blue cubes (Water) in your reservoir.

9. Place 1 black cube (representing Iron) on the first space of your conveyor belt.

10. Place 1 black cube (representing waste) on the first space of your waste track.

Final Preparations

A. Equipment Tiles

Shuffle the special equipment tiles (page 12) and place one more than the number of current players face-up where everyone can see them. For example, draw 4 tiles in a 3-player game.
Starting with the last player and moving counter-clockwise, each player chooses one of the face-up special equipment tiles. All unused tiles should be returned to the game box. Each player then places their tile on the corresponding location of their player board, face-up.

For First-Time Players:
We recommend that you skip the use of special equipment tiles, instead placing them all in the game box.

B. Choose the starting positions:

For 2 players: Shuffle one player's hand of scientist cards and reveal 1.
For 3 players: Reveal 1 purple scientist (level 2) card from the deck.
For 4 players: Shuffle one player's hand of scientist cards and reveal 2.

The starting player chooses one of the modules shown in the action zone of the card(s) and places their astronaut there, not on the module's activation space. The other players then do the same in clockwise order. Two astronauts cannot be placed in the same module unless that symbol appears on both revealed cards of a 4-player game.

After all the astronauts have been placed, all cards return to their owner's hands (2 and 4 players) or are returned to the level 2 scientist deck, which is then shuffled (3 players).

Shown Modules

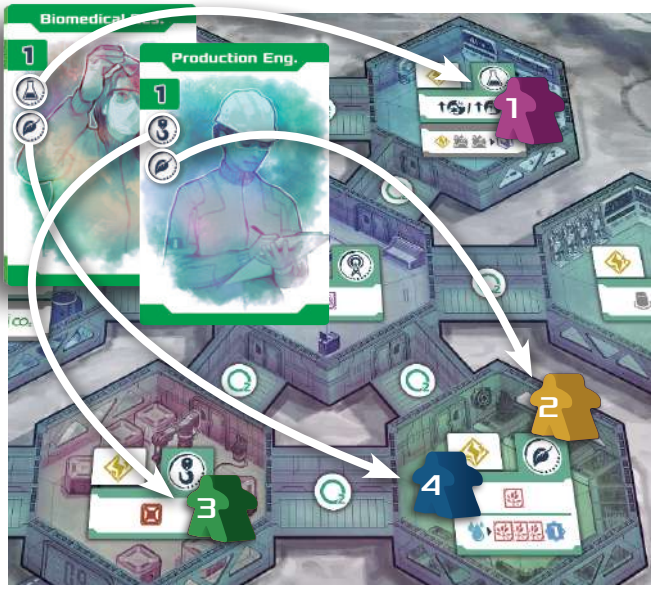
2 Players

3 Players

4 Players

EXAMPLE

Diego shuffles his starting cards and reveals two at random: Production Engineer and Biomedical Researcher. Marcio, the first player, has the choice of starting the game in the Shipping Dock, the Greenhouse, or the Laboratory. He chooses to start in the Laboratory and places his astronaut there. Ana is next and can choose between the Shipping Dock and the Greenhouse and places her astronaut in the Greenhouse. Diego has the same options available as Ana, since the Greenhouse appears on both of the revealed cards. Diego places his astronaut in the Shipping Dock, leaving Beatriz no option but to start in the Greenhouse with Ana.



After all players have finished setting up, the game can begin!

GAMEPLAY

Luna Maris is played out over 5 rounds, equivalent to 2.5 lunar days. Odd rounds take place during daytime, and even rounds during nighttime. Each round is divided into:

1. Production Phase
2. Action Phase
3. Cleanup Phase

1. Production Phase

During the production phase, each coordinator prepares their colony and team for two weeks of arduous work.

IMPORTANT: The production phase is not performed during the first round of the game. Start immediately with the Action Phase.

All players complete the production phase simultaneously, which consists of two parts:

A) Ore Storage and Mining

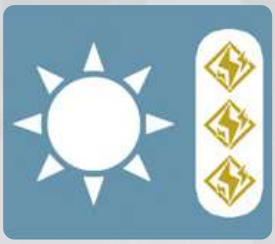
Iron and titanium ores mined on the moon are highly radioactive and cannot be stored near the colony for too long.
First, any ore present on the right-hand space of your conveyor belt must be discarded and becomes waste by moving the cube to the waste track (1). Then, any ore present on the first space of the conveyor belt is moved to the last space (2).

Finally, take ore cubes from the common supply according to the number and locations of your active probes and place them on the first space of your conveyor belt (3).

Beatriz receives 2 Iron cubes, *Ana* receives 1 Iron cube and 1 Titanium cube, and *Diego* receives 3 Iron cubes and 1 Titanium cube. The purple marker is blocking the space that is not used in a 3-player game.

B) Solar Energy

During the 3rd and 5th rounds (which occur during daytime), your solar panel array produces 3 energy cubes, which should be placed on the battery of your player's board.



Attention! The energy storage limit of any player is 6 energy cubes. If at any moment you would receive more energy than this limit, any extra energy is immediately returned to the general supply.

Once the production phase is complete, all colonists are prepared for a productive, 2-week work period. Proceed to the action phase.

Did you know?

There are many projects under development to found lunar colonies. Many of these bases would consist of several isolated or interconnected habitation zones and each would have a specific function such as laboratories, greenhouses, and other work areas. One attractive function of a lunar base would be the ability to extract ore, minerals, and fuel sources such as helium-3. A probable location for this type of colony is at the lunar south pole.

2. Action Phase

Your team of scientists must now put their training to the test and perform the necessary actions to optimize the colony's yield of lunar resources and profits.

In this phase, players sequentially perform one action in turn order. Players continue to take actions in order until they choose to end their action phase.

Once all players have ended their work periods, the cleanup phase begins. A player must choose one of the following options on their turn:

A) Activate a Module
B) Feed Scientists
C) End the Work Period

A) Activate a Module

For this action, a player chooses a scientist card to use and then moves their astronaut between the different modules of the colony, consuming oxygen. You may then activate the module in which you ended your movement. Your options are limited to the modules listed on the scientist cards that you currently have in your hand.

IMPORTANT: *If you do not have any scientist cards in your hand, you may not choose this action!*

Carry out this action by performing the following steps:

A1. Choose a Scientist:

Choose 1 scientist card from your hand and place it face-up next to your player board. Used scientist cards will continue to be placed face-up on this pile, forming your rest stack. These cards do not return to a player's hand until they feed their scientists with Action B.

SCIENTIST CARDS

Scientists are responsible for activating the various modules of the colony. A starting scientist can activate only one module before needing to rest, while level 2 scientists can activate up to 2 modules. A scientist can activate a module only if they are trained to do so, with the exception of the sleeping quarters. Starting scientists have 2 specialties and level 2 scientists have 3 specialties. The card elements are:

Profession

Specialties
These are the modules in which the scientist can perform actions in your colony.

The Psychologist has been trained to use the Comms Room, Greenhouse, and Recycling Facility.

Activations
The number of modules that the scientist can activate on a single turn.
In this example, the Psychologist can activate 2 modules during the same turn.

The Electrical Engineer can activate one of the following modules: Power Plants or Comms Room.

Starting Scientists
Each player starts the game with 6 scientists. The professions of the starting team are the same for all players and only differ by the color and artwork of the cards.

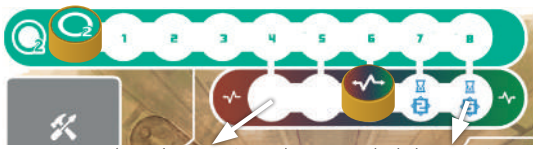
A2. Move your Astronaut and Consume Oxygen:

Choose 1 module present on the scientist card that you selected and move your astronaut there starting from the module in which the astronaut is currently located. Note that not all the modules have direct passages between them, potentially forcing your astronaut to pass through multiple modules before arriving at its destination.

While moving your astronaut, before entering each module, you must consume 1 oxygen by moving the oxygen consumption marker on your player board 1 space to the right.

Oxygen Consumption and Stress Tracks

When consuming oxygen, move your marker to the right. The oxygen consumption track has 8 spaces, although the stress track below is what limits the amount of oxygen you can consume per round. *A well-rested team consumes oxygen more slowly. In the example below, Ana can consume up to 6 oxygens.* Moreover, a well-rested team is a happy team! This can score you bonus victory points at the end of the game.

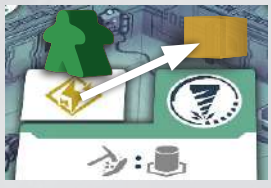


(maximum stress) *(minimum stress)*

A3. Module Activation:

Once your astronaut has moved to a module listed on the scientist card, you can then perform an action there after paying any potential costs. All modules have a main action and some modules offer an extra action. You can find the description of each module starting on Page 17.

If your astronaut wishes to use a module that is not currently active, place them on the energy symbol of that module, discarding 1 energy cube.



The module is considered active while an astronaut is on top of the energy symbol. It only becomes inactive if they leave the module (or step away from the energy space), if you feed your scientists (action B), or if you end your work period (action C).

When the module becomes inactive, any player that wishes to use it again must pay the normal energy cost for activation and place their astronaut on the energy symbol.

If another astronaut is already on the activation space, that module can be used without paying energy. Moreover, if another player uses the module that your astronaut is keeping active, you receive 1 victory point.

EXAMPLE

Above, Beatriz doesn't have to pay an energy cube to use the Mining Station module, since Diego has already activated it, and Diego receives a victory point.

Attention!

Some modules have an extra action (pages 19 and 21) that can be performed at any point during your turn, as long as your astronaut starts or ends their movement in that module. For these actions, the energy cost MUST be paid, regardless if the module is active or inactive.

During a scientist's activation, you may choose to perform only the main action, only the extra action, or both, in whatever order you wish, as long as any relevant costs are paid. In any of the three cases, this counts as one activation for your scientist card. If you only perform the extra action, you must move your astronaut off of the activation space, if it was already present there.

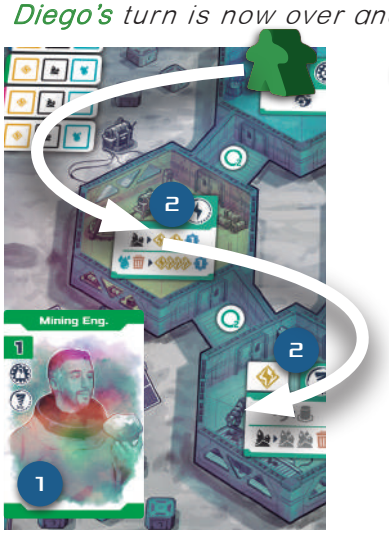
When starting a new turn, you may use the same module again if you have a scientist card in their hand with that specialty, though you must still consume 1 oxygen (after all, your astronaut still breathes even when they're not moving). If you activated it last turn, do not spend an energy cube, you also do not get a victory point from reusing your own previous activation.

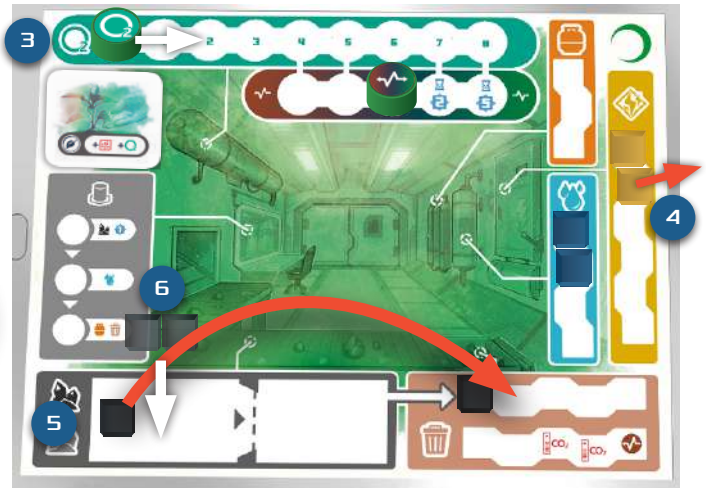
If you played a level 2 scientist card, you can perform steps A2 and A3 one additional time, paying all costs as necessary. Important: A player cannot activate a module twice on the same turn.

Once the outcome of the activation is resolved, the next player may take their turn based on the turn order track.

EXAMPLE

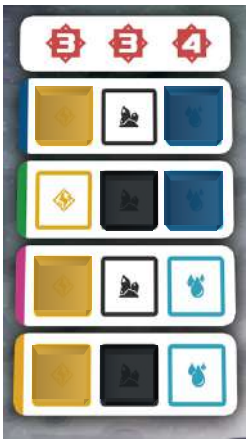
Diego wants to enrich his iron so that it has the same properties as titanium. To do so, the mining module must be active. Diego places a scientist card with the Mining Station specialty (1) onto the rest stack and moves his astronaut to the module (2), advancing the oxygen consumption track two spaces on his player's board (3). In the mining station, he spends 1 energy cube (4) since the module is inactive (thus placing his astronaut on the activation space) and moves 1 iron cube from his conveyor belt to the waste track (5). He then receives 2 titanium cubes from the general supply, placing them on the first side of his conveyor belt (6). Diego's turn is now over and play passes to the next player.





Emergency Depot

Each coordinator is promised a backup reserve of water, energy, and iron, stored in a lunar depot near their colony. A player can take one or more resources whenever they wish; this does not count as an action. However, using these backup resources shows a lack of planning, which worries the investors. As such, when removing any resource from your depot, reduce your victory points by the value indicated. Each player may use only their own resources and cannot trade or barter with other players at any time. Each player is limited to taking 1 iron, 1 water, and 1 energy during their stay on the Moon and these resources cannot be restocked later during the game.



Dead Batteries

During your action phase, you might reach a point where you still have oxygen left, but your battery is totally drained. In this case, you can:

- Go to the power plants if you have a scientist card with that specialty, pay the resource costs, and still have oxygen (see page 22);
- Choose a scientist that can perform an action in a module that another player's astronaut is keeping active, since no energy cubes must be spent (see page 10);
- Use the energy cube in your emergency depot, paying its victory point cost (see page 11);
- Feed your scientists using action B (see page 13);
- Perform only parts A1 and A2 of an action by selecting a scientist card, moving your astronaut, and finishing your movement without activating the module;
- End your work period (see page 14).

Special Equipment

Each player is given a special equipment tile at the beginning of the game that can be used when activating the module corresponding to that tile. The equipment alters certain aspects of the rules to increase the possible uses of that module. These alterations are always optional; therefore, a player can choose to perform the standard action of the module or the special action from the tile.

Corresponding Module
This marks where the equipment can be used.

Ability Icons
This describes the rules changed by the equipment tile.

(Ready to use equipment)

Special equipment can be used once per round. To help remember if you have used the equipment that round, flip the tile face-down after using it. It is flipped face-up again during the cleanup phase.

There is a detailed description of each of the special equipment tiles on the last page.

(Used equipment)

A player can repeat action A multiple times in a single round until their oxygen consumption marker reaches its limit. When this occurs, the only options that remain for that player during that round are to feed scientists (action B) or end the work period (action C).

B) Feed Scientists

A player chooses this action to return scientist cards from the rest stack to their hand.
To do so, one or more food cards must be spent, depending on the number of scientists that you wish to return to your hand. The number at the top of the food card indicates its nutritional value and determines the number of scientists you can feed with it, you choose what scientist cards to return to your hand. If you discard food cards with a nutritional value higher than the quantity of scientist cards that you can return to your hand, the difference must be thrown away, placing that number of waste cubes onto your waste track (see Waste Track on page 21).
Any food card spent in this way is discarded to a pile next to the main game board.

(watercress allows you to recover 4 scientist cards)

Food Card Bonuses

Some food cards also provide certain valuable bonuses when spent.

Arugula

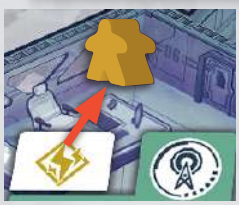
Receive 1 energy cube.

Tomato

Move your oxygen consumption marker 1 space to the left on the O_2 track.

Leek

Reduce your stress by 1 level (move the stress marker one space to the right).



IMPORTANT: If your astronaut is occupying an activation space when you perform this action, move the astronaut from that space, deactivating the module.

After performing this action and receiving any bonuses, play immediately passes to the next player.

Attention!

A player without food cards can return scientist cards back into their hand. However, to do so, the food must come from Earth, which is a very costly operation. The player must pay 2 victory points for each scientist they wish to return to their hand. A player cannot have negative victory points; if a player is at 1, or 0, victory points (and has no food cards), they may perform action B to recover exactly 1 scientist card from their rest stack, moving their disc to 0 on the victory point track. A player with food cards cannot do this.

Did you know?

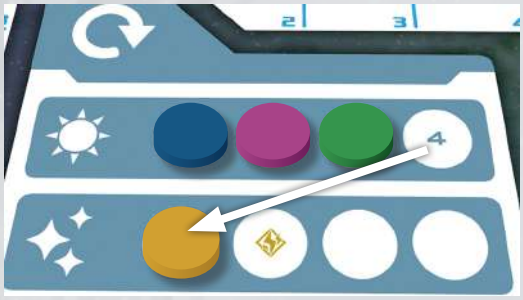
A study carried out by NASA tested which vegetables would have the most chance of success if grown in lunar soil mixed with substrate from Earth. The plants that grew the best were radishes, watercress, rye, arugula, tomatoes, peas, leeks, and green onions.

C) End the Work Period

A player should choose this action to end their work period when they don't have enough oxygen, resources, or scientists to carry out the actions they wish to perform and does not wish to feed scientists using action B. Of course, a player may end work early, if desired.

IMPORTANT: If your astronaut is occupying the activation space of a module when you end the work period, you must move your astronaut off that space, deactivating the module.

When you end your work period, you must move your turn order disc to the leftmost space of the turn order track for the next round. You may then receive the bonus listed on the space you move into, if one exists.



The bonus cannot be saved and collected at a later moment.

Days (3rd and 5th rounds):

The first and second players to end their work periods may choose 1 of the face-up food cards from the seedbed. The other players do not receive any bonus.

Nights (2nd and 4th rounds):

The first player to end their work period receives 2 energy cubes and the second player receives 1 energy cube. The other players do not receive any bonus.

After ending the work period, that player will only perform actions again during the next round. Other players continue taking actions, following the remaining turn order (skipping any other players who have ended their work periods). Once all players have ended the work period, the cleanup phase immediately begins.

3. Cleanup Phase

This phase occurs at the end of every round. All players perform it simultaneously and it is subdivided into 5 parts:

- **Calculate points for Extraction Probes**
- **Calculate points for Carbon Credits**
- **Calculate points for Improvements.**
- **Reactivate Special Equipment.**
- **Reset the Oxygen Markers.**

CALCULATE POINTS FOR EXTRACTION PROBES

Players that have installed contiguous sets of probes, regardless of terrain type, receive bonus points.

Start with the player in last place and work downwards, according to the number of players.

EXAMPLE

Ana receives 2 victory points. Beatriz and Marcio each receive 1 point. Note that Marcio has one more probe than Beatriz, but it is not adjacent to his other probes, so it does not score any points. Finally, Diego receives 3 victory points.

CALCULATE POINTS FOR CARBON CREDITS

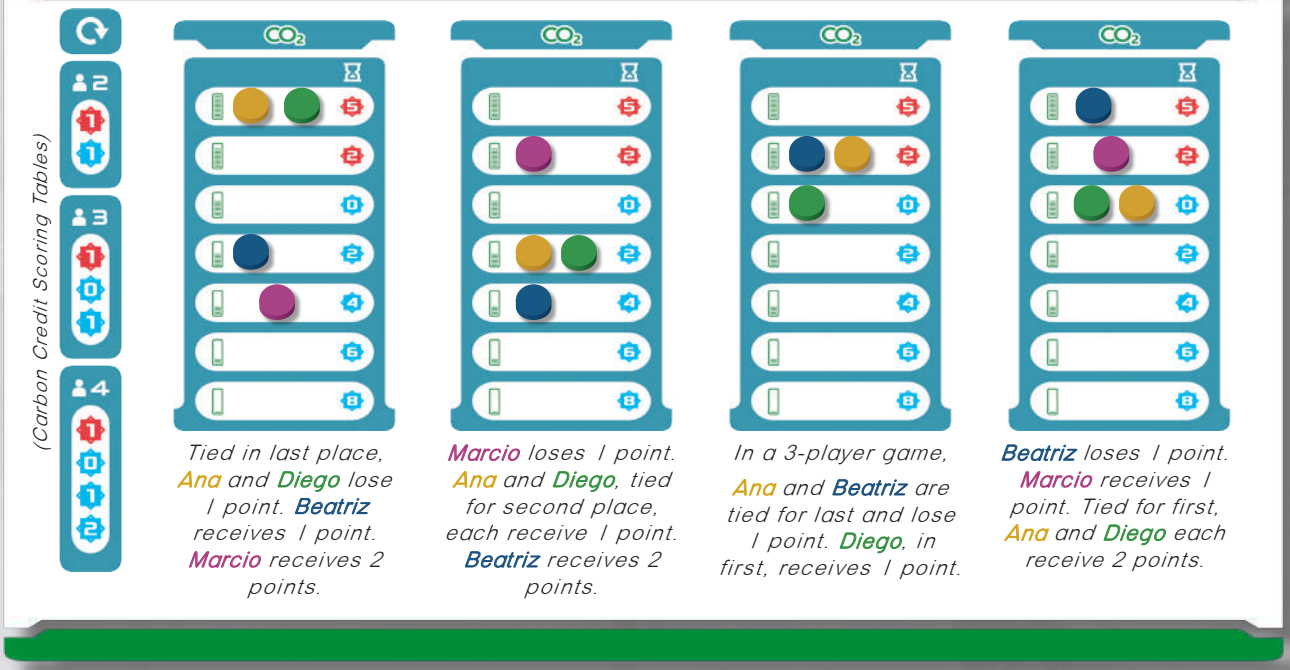
Players score points based on their current position on the CO_2 track, as shown to the right of the track and also shown below. According to the number of player, verify the players position on the CO_2 track, being the last place the players closer to the top, and the first place the players closer to the bottom of this track.

2 or 3 players: The player in last place loses 1 point and the player in first place gains 1 point.

4 Players: The player in last place loses 1 point, the player in second place gains 1 point, and the player in first place gains 2 points.

If players are tied for last place (there is still a player in first place), then those players each lose 1 victory point. If there is a tie for first place (there is still a player in last place), those players all receive the bonus for first place, in this case, the second place will receive 1 point. If two players are tied for second place in a 4-player game (there is still a player in first and last place), both tied players receive 1 point. If all players are tied, nobody wins or loses any points.

EXAMPLES



Tied in last place, Ana and Diego lose 1 point. Beatriz receives 1 point. Marcio receives 2 points.

Marcio loses 1 point. Ana and Diego, tied for second place, each receive 1 point. Beatriz receives 2 points.

In a 3-player game, Ana and Beatriz are tied for last and lose 1 point. Diego, in first, receives 1 point.

Beatriz loses 1 point. Marcio receives 1 point. Tied for first, Ana and Diego each receive 2 points.

CALCULATE POINTS FOR IMPROVEMENTS

Players receives 1 point per advanced module that they built.

Beatriz receives 2 points and Ana receives 1 point.

REACTIVATE SPECIAL EQUIPMENT

Players flip their special equipment tiles face-up if they were used during the past round.

RESET THE OXYGEN MARKERS

At the end of every 2-week shift, the CO_2 scrubbers are automatically turned on to purify the air in the colony and refresh oxygen levels.

Each player moves the disc on their oxygen consumption track back to its starting point at 0.

After this phase is complete, the production phase of the next round begins. If all markers are on the 6th row of the turn track, instead, a final scoring round is performed.

END OF THE GAME AND FINAL SCORING

The game ends immediately after the cleanup phase of the 5th round. At this point, the final scores are calculated. The backside of each summary card can be used to help score.

In addition to a player's current position on the victory point track, add or subtract points from:

Stress: If a player ends the game with their stress marker at level 8, add 5 points. If they end at level 7, add 2 points.

Hired Scientists: Add 2 points for every level 2 scientist card that was hired.

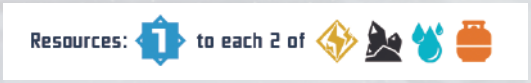
Food Variety: Each player counts how many unused food cards they have in their hand with different names. In the case of a tie, divide the points that would be awarded by the number of tied players, rounding down. *For example, two players tied for 2nd place would each receive 3 points, a 4th player will not receive points.* A player must have cards to receive points.

Nutritional Value of Food: Each player adds up the total nutritional value of their unused food cards (including repeated names). Ties are resolved in the same way as food variety.

CO_2 Track: Add, or subtract, points based on the position they currently occupy on the CO_2 track.

Completed Orders: Add, or subtract, points based on the number of orders they fulfilled, using the following table.

Stockpiled Resources: Add 1 point for every 2 resources on your player's board at the end of the game (energy, iron, titanium, water, and helium). **Leftover oxygen is not worth any points.**



Accumulated Waste: Subtract points according to the amount of accumulated waste. The first waste cube subtracts 1 point, and every cube thereafter subtracts another 2 points.

The player with the most victory points wins the game!
Ties are broken first by the number of completed orders, followed by the tied players' positions on the CO_2 track. If players are still tied at this point, they both win.

EXAMPLE

At the end of the 5th round, Beatriz has 80 points. She then adds:
5 points from her stress marker being at number 8.
6 points for having hired 3 level 2 scientists.
5 points for coming in 2nd place in food variety with 4 (of her 5) food cards having different names.
8 points for coming in 1st place in nutritional value. Adding her 5 food cards came out to 23.
5 points for being in the second-to-last space on the CO_2 track.
8 points for fulfilling 4 orders.
2 points for ending the game with 1 water, 2 energy, and 2 iron cubes.
Finally, she subtracts 3 points for accumulating 2 units of waste.
***Final Score:** 116 points*

THE INTERNATIONAL LUNAR COLONY

Coordinator, welcome to the first space colony designed for mining on the Moon! We are happy to have you on board! It is normal to be a little disoriented during your first few Earth days on the Moon; but you will soon become accustomed to the security protocols and automated systems throughout the various sectors of the colony. To ensure a fast and smooth transition to the colony's operating procedures, we have prepared this manual, which should also improve efficiency. Our colony is composed of 10 functionally independent, yet interconnected modules; each one has a purpose and is vital for your work and survival.

To activate a module, remember that you must call upon a scientist with a relevant specialty by playing their card. Your astronaut must also be in that module, moving it (and consuming oxygen) if necessary. Also note that you may need to spend 1 energy cube to activate a module before using it, as described in action A of the action phase (page 10).

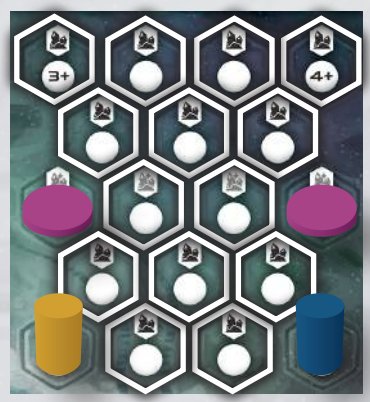
Airlock

Our doorway to the rocky surface of the world outside, the Airlock allows you to send a scientist out of the colony to install more mining probes. This is a risky operation though, which always adds stress to your team!

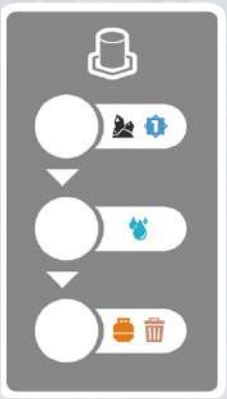
Main Action – Installing New Probes:
Activate the module and increase your stress level by 1, moving your stress marker left 1 space. (There is a chance that this may result in your stress marker being below your current oxygen consumption level and is the only time that this may occur.)

If your stress marker is already at its minimum (level 4), you cannot perform this action until you alleviate some of the stress using the Sleeping Quarters (page 23).

Each player starts the game with 1 probe already installed on a mining zone in the mining area on the main game board. This supplies the player with 1 iron cube every round during the production phase. When using this module's main action, a player installs an additional extraction probe, removing a probe marker from their player's board and placing it on any unoccupied mining zone. Remember that you score extra points at the end of each round if your probes are adjacent to one another (see page 14).



(Mining zones available during a 2-player game.)



Installed probes must be taken from your probe depot from top to bottom. When you place your first additional probe in the mining area, you immediately gain 1 victory point and 1 iron cube, which is placed on the first space of your conveyor belt. Upon placing your second additional probe, you immediately gain 1 water cube. Upon placing your final probe, you immediately gain 1 helium cube and must receive 1 unit of waste. All resources must be placed on their proper reserves on your player's board. If you do not have enough space for a resource, you do not take it from the central supply, and it is lost.

Attention!

Gray mining zones with a ✦ symbol represent titanium mines. Titanium is mined in the same way as iron and can be used freely in the place of iron whenever needed. The inverse does not apply.

Comms Room

Past the Airlock, we reach the Comms Room, your direct channel of communication with Earth. This is where you can hire new scientists for your mission; the corporations preselect candidates and send their profiles directly to you for approval.

Main Action – Hiring Scientists:
Activate the module and choose a level 2 scientist card from the hiring board, paying their hiring fees (1 or 2 iron cubes) as shown above their position.

(Hiring board and the hiring costs for the available scientists.)

A recently hired scientist goes directly into that player's hand and can be activated on their next turn. Activating this module is the only way to hire new scientists.
Once a scientist has been hired, shift all cards to the right to fill any spaces and draw a new scientist card from the relevant deck, placing it on the leftmost space.

Shipping Dock

Various companies invested a great deal to found this colony for the sole purpose of sending resources extracted from the Moon back to Earth. This is only able to be done through the Shipping Dock.

Main Action – Fulfilling Orders:
Activate the module and choose one of the available order tiles from the loading belt. Then, do the following:

- Discard the resources shown on the order tile, placing them back into the general supply;
- Receive the rewards shown on the tile (see the box below);
- Remove the order tile from the loading belt and place it next to your player's board;
- Flip over the next order tile from that pile, if present.

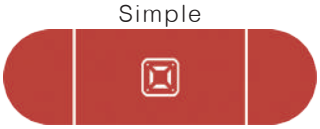
Each order remains on the loading belt until it is fulfilled by a player and only visible orders can be fulfilled. If an order pile runs out of tiles, it remains empty.

Order Tiles

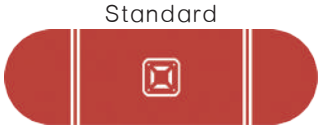
Order Tiles represent the orders placed by various companies on Earth for the Moon's resources. A player is not explicitly required to fulfill them, but the investors are strongly hoping you do! After all, this is the main reason you were sent to the Moon.

There are 4 types of orders:

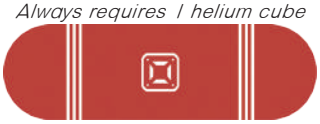
Simple



Standard



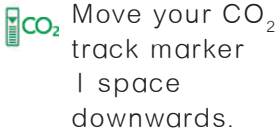
Intermediate
Always requires 1 helium cube



Difficult
Always requires 2 helium cubes

Resources requested to fulfill an order:

Upon fulfilling an order:



Move your CO_2 track marker 1 space downwards.

Discard 1 waste cube.

Victory points.

Move any 1 scientist back into your hand from your rest stack, including the scientist you just used, without paying any food costs.

Move one of the research tracks by 1 level.

Laboratory

The laboratory is equipped to carry out research to develop various improvements for the colony, increasing mining yield and creating ecologically sustainable systems.

Main Action – Researching Projects:

Activate the module and move your disc by 1 space along one of the two research tracks on the main board: Extraction or Sustainability.

Each track has 4 levels, and all players start at the first level. Each space that the player moves on a track unlocks a new action that can be used at the Industrial Complex or the Recycling Plant. New actions are always in addition to those that were previously unlocked and are not lost when increasing levels. Actions unlocked here are discussed in more detail in their respective sections: the Industrial Complex (page 20) and the Recycling Plant (page 22).

(research bonus area)

(research track: extraction)

(research track: sustainability)

Scoring Bonus from Research Caps:

After reaching the 4th level of either research track, an additional research project earns the player 5 victory points and one bonus of that player's choice from the research bonus area, marked by placing the player's disc over that bonus. Each bonus can be obtained by only 1 player. After choosing the bonus, a player must receive that bonus immediately. If they do not have the space to place a resource, it is lost. If a player chooses the bonus of discarding 3 waste cubes and they have less than 3 waste cubes, they simply discard however many they have. For a bonus that includes taking a waste cube, taking the waste cube is not optional.

If a player has already capped out both their tracks, they cannot choose this action.

Research Bonus Legend:

Extra Action – Building Advanced Modules:

Choose one of the advanced modules that were revealed at the beginning of the game, if used, and place it over its respective base module. This costs 2 titanium and 1 energy, regardless of the Laboratory's activation state. Additionally, place 1 disc of your color (from those that were set aside at the beginning of the game) on the leftmost available area on the construction track and immediately receive the number of victory points shown. A player can build more than 1 improvement during the game. During each cleanup phase, players receive 1 victory point for every module that they built so far.

(extra action icon)

(immediate construction bonus)

(end-of-round bonus)

From this point forward, the improved module has new actions, immediately available to all players (more details on page 28). At most, 4 advanced modules can be built in a game.

Industrial Complex

In the Industrial Complex, ore can be processed to extract the water and helium trapped within it. The air filters can also be activated here, using your personal energy supply to scrub the CO_2 from the air in the colony.

Main Action – Extracting Water or Helium 3:
Activate the module and choose one of the available extraction procedures. To activate the Industrial Complex, you must have enough space in the relevant storage reservoirs on your player's board to store the resources obtained while processing the ore.

At the beginning of a game, your extraction research track starts at the first level. New actions are unlocked when using the Laboratory (page 19). The options available to you are shown on the extraction research track and are detailed below.

A1) Simple Water Extraction (available at the beginning of the game)

Imperative for life, water is found on the Moon as minusculus ice crystals embedded in lunar rocks. Water can be used to extract He-3 gas; to generate energy; to water crops; or it can simply be sent back to Earth. Extracting water from ore also generates unusable residue, increasing waste production.

When extracting water, move 1 iron cube from your conveyor belt to the waste track, then receive 1 water cube and 1 victory point.

A2) Simple He-3 Gas Extraction (available at the beginning of the game)

Helium-3 gas has high energy potential and is found in abundance on the Moon, trapped in the crust, and can be sent back to Earth. Processing ore in this way, however, generates unusable residue that cannot be used at the beginning of the game, increasing waste production.

When extracting gas, move 1 iron cube from anywhere on your conveyor belt to the waste track, discard 1 water cube, and receive 1 He-3 cube and 1 victory point.

B) Double Water Extraction (requires level 2 on the extraction research track)
After increasing the efficiency of the extraction process, you can double your water production; however, this also increases your waste production.
When extracting water, move 1 iron cube from your conveyor belt and 1 from the reserve placing both on your waste track, then receive 2 water cubes and 1 victory point.

C) Double Helium Extraction (requires level 3 on the extraction research track)
Automation procedures have been implemented to use the Industrial Complex in a much more efficient way.
When extracting helium, move 2 iron cubes from your conveyor belt to your waste track, discard 1 water cube, and receive 2 He-3 cubes and 1 victory point.

D) Advanced Extraction (requires level 4 on the extraction research track)
Automation procedures implemented on the Industrial Complex increase efficiency.
After performing any one extraction procedure, you may simultaneously perform an extraction procedure for the other resource without using another scientist's action, paying energy costs, or spending oxygen. In other words, you may extract water [A1 or B] and He-3 [A2, C, or the Special Equipment action for this module, if held] in the same action.

Extra Action – Activating the CO_2 Scrubber:

Based on the Kyoto Protocol, credits are transferred from those who pollute the most to those who pollute the least. Then, turn on the CO_2 scrubbers periodically to eliminate the gas.

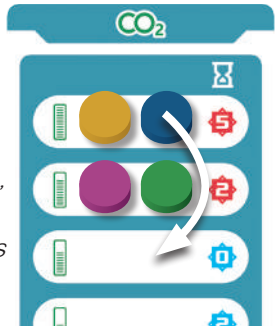
Discard up to 2 energy cubes to advance your CO_2 track by up to 2 levels, 1 for each cube spent in this way. This energy can be spent regardless of the activation state of the module.

Did you know?

Helium-3 is a non-radioactive isotope of helium with 2 protons and 1 neutron in its nucleus. It is extremely rare on Earth and is sought after for nuclear fusion research. The gas is thought to be abundant on the Moon, trapped in the upper crust as a result of billions of years of solar winds, as well as on the gas giants in our solar system.

EXAMPLE

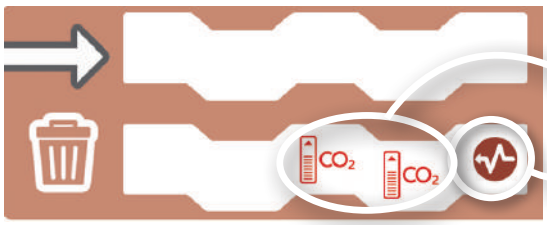
Beatriz spent two energy cubes to activate the CO_2 scrubbers, moving her disc two spaces downwards.



Note that Beatriz didn't activate the module (her astronaut isn't on the activation space), performing only the extra action of this module. Regardless, she had to discard a scientist card with the Industrial Complex specialty.

Waste Track

The waste produced in your colony is measured using a track on each player's board. Waste can be produced due to wasting resources, processing or enriching ore, and uneaten food. For each unit of waste received, a player must place an ore cube from the general supply (or from another source, when specified during an action) onto their waste track. Cubes are placed left to right, starting with the upper row. If using titanium to pay for an iron cost, a black, iron cube should be placed on the waste track, placing the gray, titanium cube back in the general supply.



Each time a waste cube is placed on the last 3 spaces on the waste track:

Move back 1 space on the CO_2 track, if possible.

Increase your stress level by 1, if possible.

If the track is full, discard any waste exceeded.

To remove cubes from this track, an action must be taken at the recycling facility or the power plants. Fulfilling some orders can also allow you to remove waste as a bonus. Cubes are removed in the opposite order in which they are normally placed.
At the end of the game you lose points depending on how much waste you accumulated.

: 1 first one and 2 to each subsequent

Mining Station

Even without placing mining probes in titanium-rich areas, it's still possible to enrich iron in such a way that it exhibits similar properties to titanium. It's also possible to rerun the probes, yielding more ore..

Main Action – Mining or Enriching Ore:

Activate the module and choose one of the following:

- **Mining Ore:**

Activate all the probes that you have installed in the mining area, receiving resources in the same way as in the Production Phase (A – page 8), with the exception that you do not move resources on your conveyor belt. All probes must be activated; you cannot take fewer resources than probes. **OR**

- **Enriching Iron Ore:**

Move one iron ore from your conveyor belt to the waste track and receive 2 titanium cubes. These cubes are placed on the first space of your conveyor belt, regardless of where the iron cube was taken from.

Power Plants

Since the lunar colony spends 14 Earth days in darkness, some auxiliary power generation projects were developed. Energy can be generated by burning impurities in ore or using hydrogen from hydrolyzed water.

Main Action – Generate Power:

This module does not have an activation space and therefore does not require the expenditure of an energy cube to activate it. A player does not receive any points if another player uses the Power Plants with another astronaut present in the module.

Activate the module and chose one of the following options:

Thermoelectric Power Plant:

Discard 1 iron cube, placing it into the general supply, and receive 2 energy cubes and 1 victory point. **OR**

Hydrogen Power Plant:

Discard 1 water cube and 1 waste cube from your waste track, then receive 4 energy cubes and 1 victory point.

Recycling Facility

Don't let your waste accumulate since investors will frown upon your mismanagement of resources on the Moon. It's possible to recycle your waste at the Recycling Facility.

Main Action – Recycling Waste:

Activate the module and choose one of the recycling procedures that are available. At the beginning of the game, the sustainability research track is at the first level.

New procedures are unlocked at the Laboratory (page 19) by moving along the research track and are detailed below.

A) Simple Recycling (available at the beginning of the game)

Remove 1 waste cube from the waste track, placing it on the first space of your conveyor belt. This cube is now considered an iron cube.

B) Energy Recycling (requires sustainability research level 2)

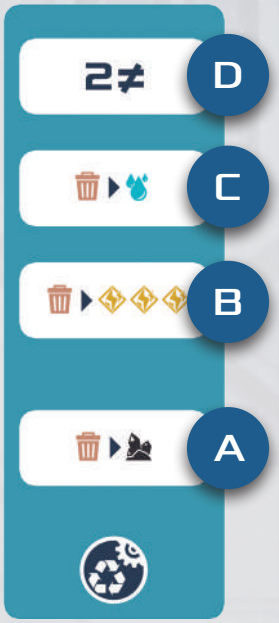
Discard 1 waste cube from the waste track, returning it to the general supply. Receive 3 energy cubes.

C) Water Recycling (requires sustainability research level 3)

Discard 1 waste cube from the waste track, returning it to the general supply. Receive 1 water cube.

D) Advanced Recycling (requires sustainability research level 4)

Perform two different recycling actions from the above 3 options. This does not use another activation, nor does it consume more energy or oxygen. If you hold the Special Equipment for this module, you may use its action as one of your two actions.



Advanced Module:

If the Advanced Recycling Facility is built (page 28), place the Advanced Sustainability Research Tile over the Sustainability Research Track.

Greenhouse

After a long work period, the colonists get hungry, and you need to feed your team. It would cost a fortune to import all your food from Earth, so you need to make use of the community Greenhouse to grow different crops and feed your scientists.

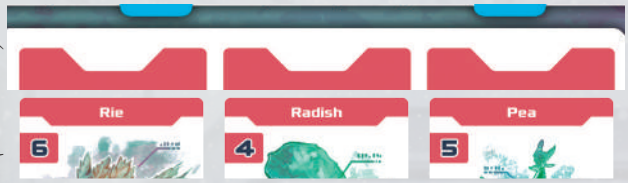
Main Action – Harvesting Food:

Activate the module and choose one of the following options:

- Take a face-up food card from the seedbeds. **OR**
- Discard 1 water cube, take 3 face-up food cards from the seedbeds, and receive 1 victory point.

After drawing a food card, place it in your hand. When food cards are taken, new ones are drawn and placed in the seedbeds after the end of a turn. When the food card deck runs out, shuffle the discard pile, creating a new deck.

(seedbeds)



In addition to feeding your tired scientists, giving them the energy to start another shift of work, unspent food cards are worth points at the end of the game. The way these are scored is explained in the final scoring section (page 16).

Sleeping Quarters

Is your team tired, overworked, or stressed? Give your scientists a break to relax for a while. Elevated stress levels increase breathing rates, eventually noticeably impacting oxygen consumption. Exhausted scientists can't get the same amount of work done with their oxygen rations as they can when well-rested.

Main Action – Take a Day Off:

This module is the only place that can be used by any and multiple scientists; no specialty is needed to activate it.

Activate the module and discard as many scientist cards as you wish to reduce your stress levels. Level 1 scientists reduce stress by 1 and level 2 scientists reduce stress by 2, moving the stress marker that many spaces to the right. If a level 2 scientist has already performed exactly 1 action this round, you can forfeit their other action by discarding that card to reduce stress by 1 level. This reduction in stress results in an immediate increase in actions that can be used even during the same round.

Discarded scientists go to the rest stack along with any other scientists used during any previous actions and can be recovered in the same way by feeding them.

Your turn always end after activating this module.

EXAMPLE

Marcio was at the maximum stress level (below number 4) and chose to use the sleeping quarters as his second action that round after playing a level 2 scientist (Food Engineer) in an adjacent module, the Laboratory. He consumed 1 oxygen to move his astronaut and 1 energy cube to activate the module. Next, he counts 1 for his Food Engineer (since he used its first action in the Laboratory), and then adds the other two cards: the Physicist (worth a full 2 points), and a Biologist card (always worth 1 point). He then was able to move his stress disc to the right by 4 spaces, allowing him to perform up to 8 actions or movements in a round with the same amount of oxygen.

SOLO MODE

One corporation has developed a program run by a self-sufficient Artificial Intelligence and you have been challenged to outperform it to help it improve its algorithms. Are you up to the challenge?

PREPARATION

Follow all the standard preparation steps for a 2-player game, except for the following modifications. Choose a color to represent the AI:

1. On the turn order track, place a disc of your color and then the AI's color. You always play first.
2. Take the AI's player board and place 1 waste cube, 3 probes, 2 water cubes, and a disc to represent what module the AI is activating. *(The AI is entirely computer-based and therefore doesn't use an astronaut figure.)*
3. Choose the strength of the AI programming:

Basic AI: Take the cards with A-F in the upper corner. This is the recommended setting for your first solo gameplays.

Advanced AI: Take the cards with G-L.

Intermediate AI: Mix cards from A-L. More cards from the advanced deck will likely result in a more advanced AI.

4. Randomly draw 5 cards from the AI deck you just formed, shuffle them, and place them in a pile, face-down, near the AI's player board. All other AI cards can be returned to the game box.
5. Draw 2 random special equipment tiles, pick one, and return the other to the game box. The AI was never programmed to use special equipment and therefore does not get a tile.
6. Similarly to what is described on page 7 for a 2-player game, draw one scientist card, choose one module on the card, and place your astronaut in that module off of the activation space. Then, place the AI disc on the activation space of the other module.

Notes about Resources

Since your opponent is an artificial intelligence, it does not use:

Energy – It is always connected directly to the power plants. No action can be impeded from an energy standpoint. The AI's computer room does have a backup battery, though it is only filled through recycling actions and is never depleted. This stored power only counts for victory points at the end of the game.

Iron – Extraction probes can be wirelessly activated as needed to extract the necessary amount of ore. No action can be impeded from an iron standpoint. In the other hand, the AI ignore iron during scoring.

Oxygen – The server room does not need a supply of oxygen and focus can be quickly changed from one module to another. No action or movement can be impeded from an oxygen standpoint.

All other resources are stored on the AI's player board as they are collected.

GAMEPLAY:

In the solo version, each round is divided into:

1. Production Phase

Move the ore on your conveyor belt, receive ore based on your probes, and store energy when indicated on the game board.
The AI only receives ore if it has a probe on a titanium mine location. The server room is shielded from radiation and therefore ore does not have to be discarded if it is not quickly used.

2. Player's Action Phase

Perform all your actions before passing on to the AI instead of going in turn order like a normal game. You can move and activate modules one after another, consuming oxygen, energy, and scientists; you may also feed scientists as many times as you require between actions, consuming food cards as normal. This continues until there is no more oxygen or you wish to end the work period.
Throughout the round, you may use the module that the AI is operating without paying any energy costs as normal, though the AI doesn't receive any victory points from this.
Once you end the work period, move your disc to the first player space for the next round and receive the listed bonus. Play then passes to the AI.

3. AI's Action Phase

Flip over the top card of the AI deck. Perform each of the actions listed on the card in order, from top to bottom. Use the AI disc to mark which action is currently being performed.

Resolve all steps for the module on the card as written, including any optional steps if they apply, then move the marker to the next module. If an action is not able to be completed, the AI skips that action and continues to the next instruction.
If the AI uses a module that you have activated, you do not receive any victory points.

Once all actions on that card have been carried out, place the AI disc on the activation space of the module that it last performed an action in.

This module will remain active until the AI completes its next action phase; any time you perform the main action in this module during your next action phase, you will not need to spend energy.
Once the AI has completed its actions, move the AI turn marker to the next round. It does not receive any bonuses from the turn order track.

(Example of an AI Card)

4. Cleanup Phase

The cleanup phase takes place normally. Score constructions, CO_2, and probe distribution for the player and AI, when applicable.

AI Action Algorithms

When activating the **Shipping Dock**, if possible, the AI tries to fulfill one of the active orders in play, giving preference to the highest point value. If there is a tie, it chooses the order that requires the fewest resources.

Discard the indicated resources, remembering that the AI always has enough iron ore at hand. For example, if the AI tries to fulfill an order for only iron ore, it simply receives the order tile and its listed points and bonuses. (Bonuses are described on the AI's player board.)

When activating the **Laboratory**, the AI advances one of the research tracks. The AI card lists its current research preference. Always consider this preference, when possible. If the AI completes a research track, it receives 5 victory points as usual and one of the bonuses, chosen in the order listed on the AI's player board, obeying any other conditions.

Secondary Action: If the AI has enough titanium for one of the available constructions, it builds the leftmost improvement and receives the corresponding construction bonus points. One of the AI's discs marks this construction and it receives points at the end of each round as usual.

When activating the **Greenhouse**, the AI receives the food card with the highest nutritional value and places it next to its player board. If there are food cards with the same value, choose the tied card farthest to the right. If the AI has more than 2 water cubes in its reservoir, it consumes one water and takes all 3 food cards, scoring as normal. The AI never spends titanium in the Greenhouse, if it has been improved.

When activating the **Comms Room**, the AI hires the cheapest available scientist and places it next to its player board.

When activating the **Recycling Facility**, the AI will discard up to 2 waste cubes and receive the relevant resources based on its research level, as shown on the card.
Note that on the first level the AI does not receive anything. If there isn't enough space to store water or energy (the AI's backup battery stores 8 units of energy), it receives 1 titanium instead for each resource that it don't have space to store. If the AI has 0 waste cubes to recycle, it simply skips to the next action.

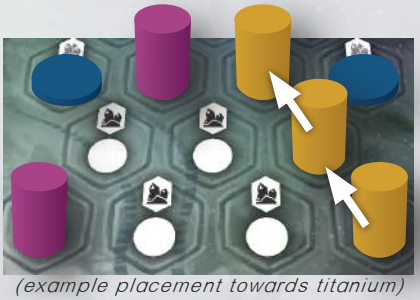
When activating the **Industrial Complex**, if the AI has fewer than 2 units of water, it will produce water, waste, and victory points based on its research level. If the AI already has 2 or more units of water, it will discard one of them to produce helium-3, waste, and victory points based on its research level. If the AI has 2 or more units of water but does not have any space to store helium-3, it will skip the main action.

Secondary Action: The AI always activates the CO_2 scrubbers. According to the instructions on the card, lower the CO_2 track by 1 or 2 levels whenever possible.

When activating the **Mining Station**, the AI receives 2 titanium cubes from the general supply and receives 1 waste cube. Titanium remains on the conveyor belt indefinitely and does not move as rounds pass since the server room is heavily shielded against radiation. If the Mining Station has been improved, the AI does not produce waste here.

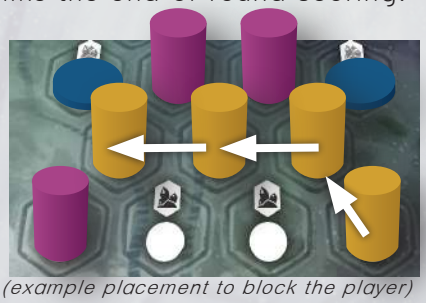
When activating the **Airlock**, the AI places a probe adjacent to one of its previously installed probes. If there is no available space, place a probe in a space that will allow future adjacent placement of probes.

Probes are always placed preferentially adjacent to others in the direction of titanium mine locations along the quickest path. If there are no more titanium mines available, the AI will try to place probes in such a way to block its opponent from placing their own adjacent probes.



(example placement towards titanium)

If there are no probes left to place, the AI immediately scores points for adjacent probes, exactly like the end-of-round scoring.



(example placement to block the player)

Final Scoring

Scoring in solo mode is slightly different from normal scoring and is carried out as follows:

Stress: If the player ends with their stress marker at level 8, add 5 points; level 7, add 2 points. The AI does not score in this category.

Hired Scientists: The player and AI each get 2 victory points for each level 2 scientist that they hired.

In addition, if the AI hired more scientists than the player, it will receive a bonus based on the number of extra scientists.

Food Variety: This category does not score points.

Nutritional Value of Food: Whoever has the highest nutritional value (summing all the food cards together) receives 5 points. If there is a tie, the AI wins.

CO_2 Track: Add or subtract points according to the positions on the CO_2 track as usual (page 16).

Fulfilled Orders: The player and AI add or subtract points based on how many order tiles they collected, following the table below. Also, if the AI fulfilled more orders than the player, it gets a bonus scoring based on the number of orders.

Stockpiled Resources: Like normal scoring, score 1 victory point for every two resources among: energy, iron (only the player), titanium, water, and helium-3. **Leftover oxygen is not worth any points.**

Accumulated Waste: The player and AI subtract points based on how much waste they let pile up, as usual (page 16).

The player wins the game if they have more points than the AI.
If there is a tie, it is broken based on whoever fulfilled the most orders. If there is still a tie, it is broken by the best placement on the CO_2 track. If both the player and the AI are still tied at this point, the player loses.

Special Equipment

When activating the corresponding module, you may:

High-Frequency Antenna

Hire a new scientist for one less iron cube. (Scientists that cost 1 to hire are hired for free.)

Sonar Mining Probes

Receive 1 extra titanium cube.

Exclusive Contract

Receive 1 victory point for every order that you have already fulfilled.

Ultra Growth Fertilizer

Draw the top card from the food card deck and move your oxygen marker 1 space to the left on the O_2 track.

When activating the corresponding module, instead of the main action, you may:

Bioenergy Reactor

Discard 1 iron cube and 1 waste cube, then fill your battery and receive 1 victory point.

Dry Helium Extraction Chamber

Discard 2 iron cubes and receive 1 helium cube and 1 waste cube.

Lunar Composter

Discard 1 waste cube and move your oxygen marker 2 spaces to the left on the O_2 track.

Advanced Modules

Upon improving the corresponding module:

Place the advanced sustainability research tile (♻) on the appropriate space. New action: Discard 1 waste cube and receive 1 titanium or take one food card from the seedbeds. Receive 1 additional energy cube from Energy Recycling.

Receive 1 additional energy cube during any action at the power plants.

Waste is not produced during an action if titanium is used instead of iron. If you use both iron and titanium during an action, you still produce waste for each iron cube used.

New action: discard 1 titanium cube and draw 2 food cards and 1 victory point.

Receive 1 additional victory point for every titanium cube sent instead of iron.

Discard 2 titanium cubes and reactivate a maximum point bonus on which you have already placed a marker (page 19). Secondary action: improve new modules by paying only 1 titanium.

In addition to the main action: discard a level 1 scientist from your hand or rest stack (except the one used to activate this module) to the game box and receive 2 victory points.

Score victory points again each time you use your mining probes or, when discarding 1 iron cube, receive 2 titanium cubes and no waste cubes.