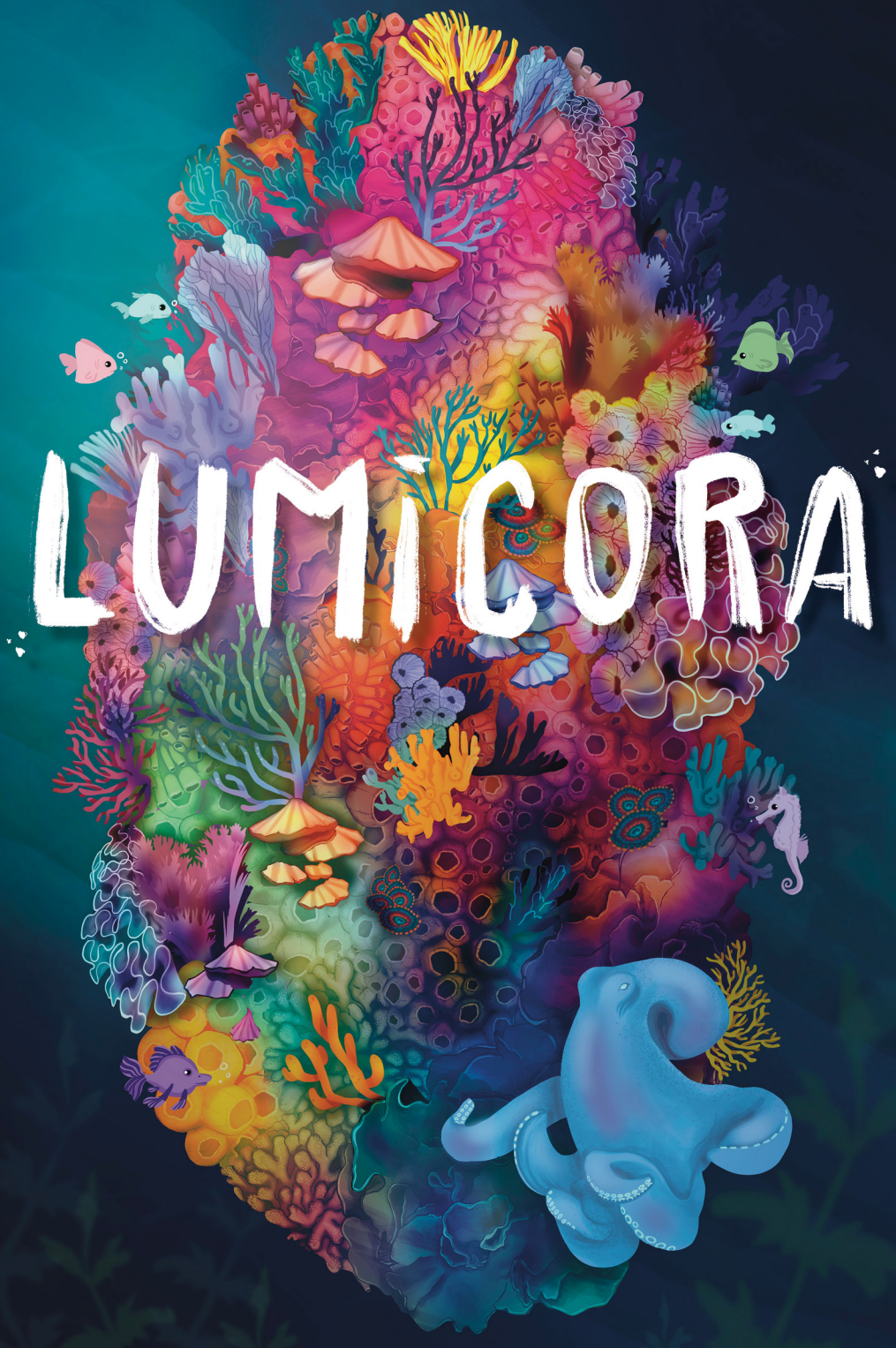
A game by Rita Modl



LUMICORA

for 2 to 4 Players, ages 10 and up

RULE BOOK

DEEP PRINT GAMES

Theme and object of the game

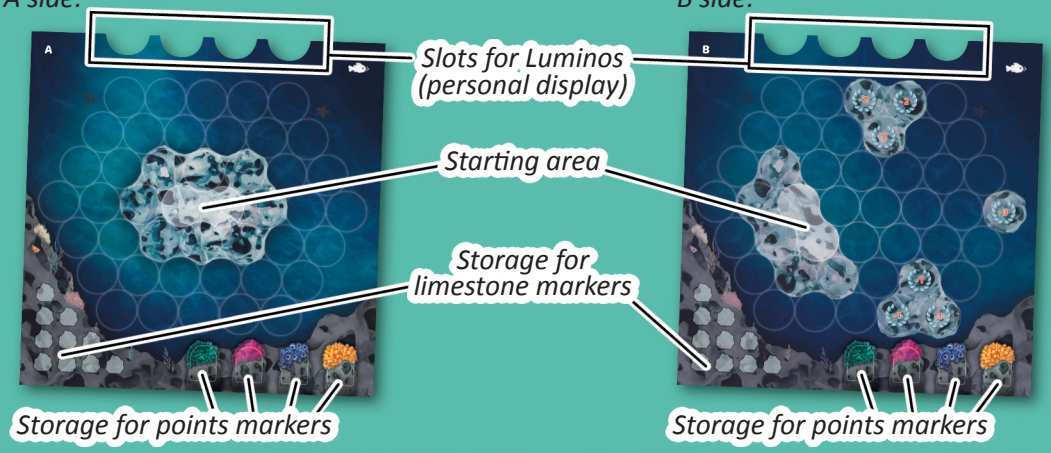
The sea shines in colorful hues, as luminescent organisms bathe the coral reef in breathtaking light. This is not only a beautiful sight for the human eye but also a fascinating ecosystem and the home of many species. In recent decades, the number of coral reefs has greatly decreased, and we must protect this habitat.

In Lumicora, you are responsible for rebuilding one of these vital coral reefs. Who can create the most impressive ecosystem by cleverly arranging their coral tiles? Skillfully expand different types of coral and attract as many marine animals as possible in this competition to build the most extraordinary coral reef.

Components

4 reef boards (1 for each player)

A side: *B side:*



4 fish markers



1 turtle marker



104 Luminos
There are 26 tiles in each of the 4 coral colors.
Each tile set (yellow, in our example) has the following values:

front:



back:



6 starting Luminos



1 octopus marker



40 limestone markers



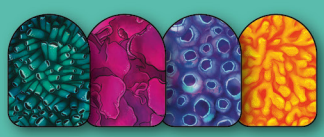
1 score board

dark side: *light side:*



16 scoring tiles
(4 tiles in each of the 4 coral colors)

front: ***coral side***



back: ***jellyfish side***



4 victory point tiles

front: *back:*



1 bag



Setup

1

Place the **score board** in the middle of the table and place the following components on it:



Place the **turtle marker** on space 1 of the *round track* A.

Put all the **limestone markers** in area B as a *limestone supply*.

Place the 4 **victory point tiles** next to the upper left corner of the score board C.

Each player chooses a **fish marker** and places it on space 0 of the *score track* D.



The score board is double-sided with a dark and a light side. For your first game, we recommend using the dark side. The rules for the light side can be found on page 8.

2

Each player takes the **reef board** that has their fish marker in the top right corner. Together, choose a side (A or B) and place all the reef boards with that side facing up in front of you, with the *slots* pointing away from you.
For your first game, we recommend using side A of the board. The rules for side B can be found on page 9.





Shuffle the 6 **starting Luminos** and randomly deal one to each player. Place your starting Lumino oriented as you like in the *starting area* in the middle of your reef board E. Return all unused starting Luminos to the box.

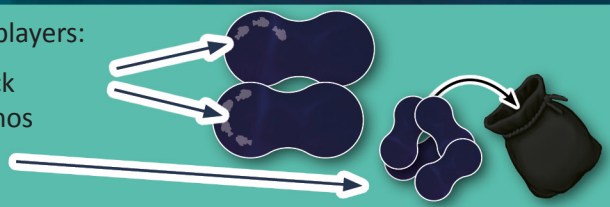


Each player takes a set of **scoring tiles**. Each set consists of 4 tiles, one in each coral color. Place them with the coral side facing up on the matching spaces at the bottom edge of your reef board F.

3

Take all 104 **Luminos** and sort them according to the number of players:

In two-player games, find all Luminos with **3 or 4 fish** on the back and return them to the box. Then shuffle the remaining 76 Luminos (without fish on the back) and place them in the **bag**.



In three-player games, find all Luminos with **4 fish** on the back and return them to the box. Then shuffle the remaining 92 Luminos face down and set aside 6 as a hidden *emergency stack* somewhere near the playing area. You only need this stack in the rare case that you run out of Luminos before the end of the game *(see page 9, "Special Case")*. Place the remaining 86 Luminos in the **bag**.

In a four-player game, shuffle all 104 Luminos face down and set aside 8 as a hidden *emergency stack* near the edge of the playing area. You only need this stack in the rare case that you run out of Luminos before the end of the game *(see page 9, "Special Case")*. Place the remaining 96 Luminos in the **bag**.

4

Draw 4 Luminos from the bag and place them face up as a general supply in the center of the table in everyone's reach. This supply is called the ***Atoll***.



Then each player draws 4 Luminos from the bag and places them face up as their ***personal display*** in the *slots* at the top edge of their reef board.



Afterwards, place the bag next to the Atoll.

5

Choose a player to start the first round and give this player the **octopus marker**.



How to play

Lumicora is played over 10 rounds. Each round has an **Action Phase**, in which each player takes a turn, followed by a **Scoring Phase**. After the Scoring Phase of the 10th round, the game ends with a **Final Scoring**.

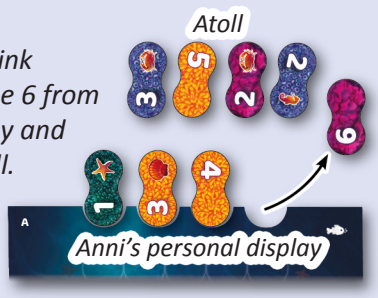
Action Phase

Starting with the player with the octopus, in clockwise direction, each player takes one turn.

A turn consists of the following **4 steps**:

Step 1: Choose **1 Lumino** from your *personal display* and place it face up with the others in the *Atoll*.

Example:
Anni chooses the pink Lumino showing the 6 from her personal display and places it in the Atoll.



Step 2: Choose **one** of the following three actions:

Action A: Take limestone OR

Action B: Take 1 Lumino from your personal display OR

Action C: Take 1-3 Luminos of a single color from the Atoll

Action A: Take limestone

Check the number on the Lumino you placed in the Atoll in Step 1 and take that many limestone markers from the limestone supply. Place them on free *storage spaces* in the bottom left of your reef board. As you have such 10 spaces, you can only store 10 limestone markers. Return any excess to the limestone supply.

If Anni chooses Action A, she receives 6 limestone markers from the limestone supply, as the Lumino she added to the Atoll shows a 6. She places them on free storage spaces on her reef board.



Action B: Take 1 Lumino from your personal display

Choose one of the 3 remaining Luminos in your personal display and take it into your hand.

If Anni chooses Action B, she may take into her hand one of the 3 Luminos in her personal display (for example, the green Lumino).



Action C: Take 1-3 Luminos of one other color from the Atoll

Choose 1-3 Luminos of a **single color** from the Atoll. This color can't be the color of the Lumino you added to the Atoll in Step 1.

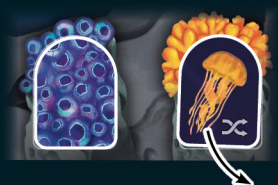
If Anni chooses Action C, she can take 1 or 2 of the blue Luminos OR the single yellow Lumino from the Atoll into her hand. She can't take the pink one, as she added a pink to the Atoll.



Step 3: If there are fewer than 4 Luminos in the Atoll, draw new ones from the bag and place them face up in the Atoll until there are 4 there again.

Step 4: Finally, if you took one or more Luminos into your hand in Step 2, you may place them in **any order** into your reef *(see page 5, "Establishing Coral")*. To speed the game up, the person to your left may begin their turn while you do this. If you are the last player for the round, everyone will wait because the Scoring Phase begins after you finish.

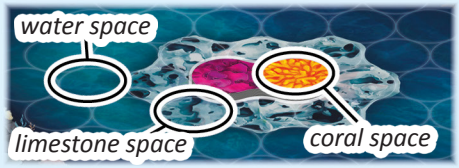
Special Action: Spend a Jellyfish to swap Luminos



If one of your scoring tiles has its jellyfish side facing up (which happens when you perform a coral scoring in the Scoring Phase), you may spend it in the Action Phase at the start of your turn to swap Luminos in the Atoll OR in your personal display with random Luminos taken from the bag. To do this, first return your scoring tile showing the jellyfish to the box. Then choose any number of Luminos, all of which must come from the Atoll OR from your own display (not a combination of both), put them back in the bag, and mix thoroughly. Draw the same number of Luminos from the bag and place them back in the Atoll or in your personal display. If you have several scoring tiles showing jellyfish, you can do this several times in a row.

Establishing Corals

At the beginning of the game, your reef board consists of 42 *base spaces* which are either ***limestone spaces*** or ***water spaces***. Additionally, you have 1 starting Lumino, which consists of 2 ***coral spaces*** of different colors. (All other Luminos consist of 2 coral spaces of a single color.)

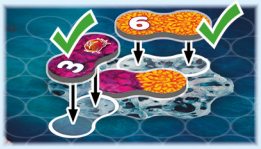


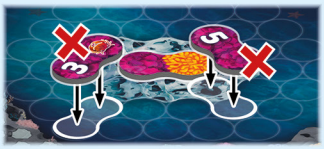
You establish corals by placing Luminos from your hand onto spaces in your reef: either onto base spaces or on top of the coral spaces of already placed Luminos. Luminos placed on base spaces are in **Level 1**. Luminos placed on top of other Luminos are in correspondingly **higher levels**.
Observe the following rules when placing Luminos:



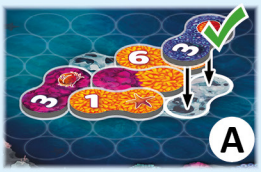
1. Touch the same color

When you place a Lumino in your reef, it must touch (edge to edge) at least 1 coral space of the same color.





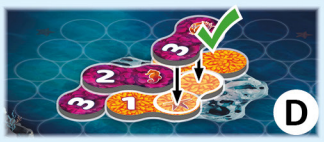
In Level 1, this means that when you place a Lumino on base spaces, it must touch at least 1 other coral space of the same color that is also in Level 1.
Exception: If there are no visible coral spaces of this color in Level 1 (A) OR the Lumino cannot be placed because there aren't 2 free base spaces adjacent to the matching color anywhere in Level 1 (B), you may place it adjacent to any Lumino in Level 1.





On higher levels, this means that when you place a Lumino on another Lumino, it must either be placed on at least 1 coral space of the same color (C), touch another coral space of the same color in the same level (D), or both.





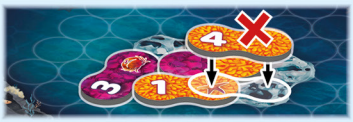
2. Do not place exactly overlapping

When you place a Lumino on other Luminos, two coral spaces of different Luminos must be covered. A Lumino may not be placed entirely covering another one, in the identical orientation.



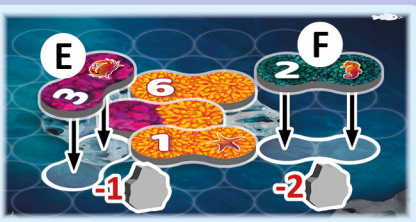
3. Place in one level

A Lumino can't be placed across two spaces that are in different levels, causing it to be tilted and unable to lay perfectly flat.



4. Pay limestone markers to place on water spaces

To place Luminos directly on water spaces, you must pay **limestone markers**. If you place a Lumino on 1 water space and 1 limestone space (E), you must take 1 limestone marker from your *storage* and return it to the *limestone supply*. If you place a Lumino on 2 water spaces (F), you must take 2 limestone markers from your *storage* and return them to the *limestone supply*. If you cannot pay the necessary limestone markers, you can't place the Lumino in this way.



5. If you can't place a Lumino, return It to the bag and lose 1 VP

If you can't place a Lumino from your hand into your reef due to the above placement rules, or you choose not to, you must put it back in the bag and lose 1 victory point (move your fish marker 1 step backwards).

Once you have placed all Luminos from your hand into your reef (or returned them to the bag), your turn ends. All Luminos in your reef remain in place for the rest of the game.

Scoring Phase

Once each player has finished their turn in the Action Phase (and no one has any Luminos left in hand), the Scoring Phase begins. Carry out the following steps in order:

Step 1: Refill your personal display: Each player draws Luminos from the bag and places them face up in the slots of their personal display until they have 4 Luminos again.

Step 2: Perform a Coral Scoring (optional): Starting with the person holding the octopus marker, each player in turn clockwise, chooses either to perform a Coral Scoring or pass.



Coral Scoring

To carry out a coral scoring, select **one** of your **scoring tiles** at the bottom edge of your reef board that displays its **coral side** face up. Flip it to the jellyfish side and immediately score the coral spaces **of the matching color**:

You may score 1 visible numbered coral space **in each level** of your reef.

In each level of your reef, you will only score the **smallest visible number** of that **scoring tile's color**.

The coral spaces you score need not be adjacent.

Example:

It's Anni's turn and she wants to perform a coral scoring. She chooses her pink scoring tile and flips it to its jellyfish side.





She now checks each level of her reef for which number to score:

- *In Level 1, she has 2 pink spaces with the number 3. She scores a 3.*
- *In Level 2, she has one pink space with a 5 and one pink space with a 2. In this case, she must score the 2, as it is smaller.*
- *In Level 3, she has no visible space with a number value..*
- *In Level 4, she has one pink space with a 6. She scores the 6.*

Therefore, Anni receives a total of 11 victory points (3 + 2 + 0 + 6 = 11).

Add the numbers and receive that many victory points, by moving your fish forward on the score track.



Then check the position of the turtle marker on the *round track* and **receive as many limestone markers** from the limestone supply as are shown under the round track:

In rounds 1 to 4, you receive 4 limestone markers. In rounds 5 to 7, you receive 2 limestone markers. In rounds 8 and 9, you receive 1 limestone marker. In round 10, you do not receive any limestone markers. Place these limestone markers as usual on free storage spaces on your reef board, discarding any that do not fit in your limestone storage area.

Note:

- You may only use each scoring marker once per game. Once you have turned a scoring marker to the jellyfish side, you cannot perform the coral scoring of that color again.
- You can only perform one coral scoring per Scoring Phase. Therefore, think carefully about when you want to do it.
- You can perform a coral scoring even if you would receive 0 victory points (for example, if you have no visible numbered coral space in that color).

Step 3: Pass the octopus marker (if coral scoring occurred):

The last player to carry out a coral scoring in this Scoring Phase receives the octopus marker and is now the first player. If no coral scoring was performed, the octopus marker stays with the current player.



Step 4: Move the turtle marker forward:

Move the turtle marker to the next space on the round track. When the marker reaches space 10, a final round (the 10th round) is played. After the Scoring Phase of the 10th round, the game ends and the final scoring is carried out.



Final Scoring

The game ends after the Scoring Phase in the 10th round. Now conduct the **Final Scoring** by working out the following 4 categories on the score board and distributing victory points (VP) accordingly. Whenever you receive VPs, move your fish marker forward that many steps on the score track. When you cross the 50 VP space, take a **victory point tile** and place it in front of you with 50 VP showing. The second time you cross 50 VP, flip the victory point tile to its 100 side.

Category 1: Jellyfish



Gain **2 VP** per scoring tile on your reef board with its **jellyfish side** up.

Category 2: Limestone markers



Gain **1 VP** per pair of limestone markers in the storage area of your reef board.

Category 3: Animals (using Dark side score board)

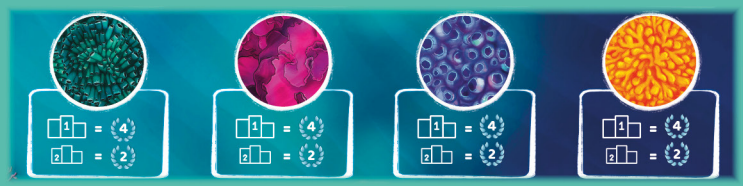
Gain VP for each of the 4 species. The more animals of a species visible in your reef, the more VP you gain for that species. However, you can score at most 4 animals per species. If you have more than 4 animals of a species, the excess are ignored.



Mollusks: Gain **0/1/4/8 VP** for 1/2/3/4 visible mollusks.
Crabs: Gain **2/4/7/10 VP** for 1/2/3/4 visible crabs.
Seahorses: Gain **1/6/7/12 VP** for 1/2/3/4 visible seahorses.
Starfish: Gain **4/8/11/14 VP** for 1/2/3/4 visible starfish.

Category 4: Color majorities

For each color, count the number of spaces of that color that are visible in your reef. It doesn't matter what level they're in, what they're touching, or what's pictured on them. Compare and score VP as described below.



Gain **4 VP** if you are the player with the most visible spaces of that color.
Gain **2 VP** if you have the second most visible spaces of that color.
No VP are awarded for third or fourth place.
In case of a tie for the most visible spaces, all tied players receive 3 VP, and no VP are awarded for the second most spaces. In case of a tie for the second most spaces, all tied players receive 1 VP. **If you have no visible spaces of a color**, you cannot score points for that color.

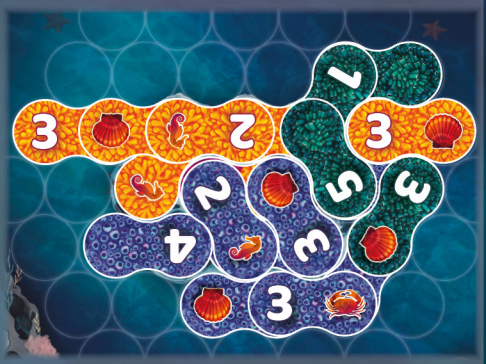
Scoring Example:

1) Peter has 2 jellyfish on his reef board, so he gains 4 VP.



2) For his 5 limestone markers he gains 2 VP.

3)
- *Peter has 5 visible mollusks in his reef, so he gains 8 VP.*
- *He has one visible crab, so he gains 2 VP.*
- *He has 3 visible seahorses, so he gains 7 VP.*
- *As he has no visible starfish, he gains nothing.*



4)
- *Peter has 6 visible green coral spaces, sharing second place with Anni. He gains 1 VP.*
- *He has no visible pink coral spaces. Therefore, he cannot score points here.*
- *He has 9 visible blue coral spaces, more than any other player. He gains 4 VP.*
- *With 7 visible yellow coral spaces, he shares first place with Moritz. He gains 3 VP.*

Note: The Luminos in your personal display and in the Atoll do not count in the final scoring.

The player with the most victory points after the final scoring wins. In the event of a tie, the tied player with the most limestone markers on their reef board wins. If still tied, the victory is shared.

Variants

Light Side of the Score Board

The double-sided score board has a dark side (recommended for your first game) and an alternate light side. While setting up the game, after choosing the score board in Step 1, set up continues unchanged as described on page 3.

The light side of the score board differs from the dark side only in the way animals are scored during final scoring. Rather than scoring points for the number of visible animals of each species, **each animal is scored individually** and earns victory points depending on the **level of adjacent spaces**. Each species is scored differently as described below.

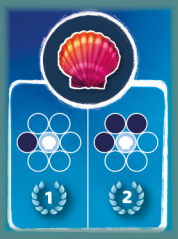
Category 3: Animals (using Light side score board)



You gain VP for each animal in your reef. Each species has requirements for what level the **adjacent spaces** must be. Spaces that are next to each other when viewed from above are considered adjacent.

There are two different scorings, each bringing a different number of victory points. For the **minor scoring** on the left, you only need one adjacent space in the required level. For the **major scoring** on the right, several adjacent spaces in the required level are needed.
Important: Each animal can receive the victory points from only one of the two scorings.

Mollusks:



Minor Scoring: Gain **1 VP** if the space with the mollusk is adjacent to at least **one water space**. *(Note: The area outside the play area is **not** considered a water space).*

Major Scoring: Instead, gain **2 VP** if the space with the mollusk is adjacent to at least **3 water spaces**.

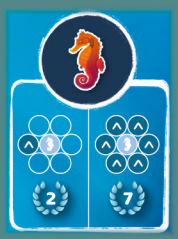
Crabs:



Minor Scoring: Gain **1 VP** if the space with the crab is adjacent to at least **one coral space in the same level**.

Major Scoring: Instead, gain **3 VP** if the space with the crab is adjacent to at least **4 coral spaces in the same level**.

Seahorses:



Minor Scoring: Gain **2 VP** if the space with the seahorse is adjacent to at least **one coral space in a higher level**.

Major Scoring: Instead, gain **7 VP** if the space with the seahorse is adjacent to **6 coral spaces in higher levels**.

Starfish:



Minor Scoring: Gain **2 VP** if the space with the starfish is adjacent to at least **one coral space in a lower level**.

Major Scoring: Instead, gain **4 VP** if the space with the starfish is adjacent to at least **5 coral spaces in lower levels**.

Scoring example:



Peter has 2 mollusks with 1 adjacent water space, and 1 mollusk with 3 adjacent water spaces. He receives 1 + 1 + 2 = 4 VP.

Peter has 1 crab with 3 adjacent coral spaces in the same level. He receives 1 VP.

Peter has 1 seahorse with 2 adjacent coral spaces in higher levels, and 1 seahorse with no adjacent coral space in a higher level. Therefore, he receives 2 + 0 = 2 VP.

Peter has 1 starfish with 3 adjacent coral spaces in lower levels and 1 starfish with 5 adjacent coral spaces in lower levels. He receives 2 + 4 = 6 VP for this.

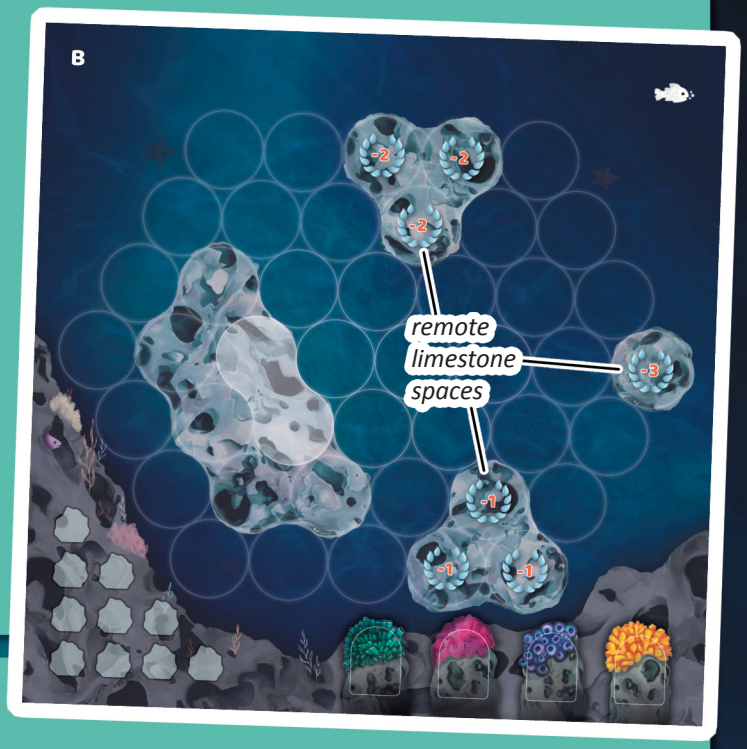
Variants

B-Side of the Reef Board

The double-sided reef boards have an alternative reverse side. While setting up the game, after choosing the reef board in Step 2, set up continues unchanged as described on page 3. All players must play with the **same side** of the reef boards.

On the B-side of the reef boards, there are fewer limestone spaces adjacent to the starting Lumino. Instead, there are additional **remote limestone spaces** at the edge of the reef board. You can reach these spaces by placing Luminos on the intervening water spaces, for which you must pay limestone markers as usual (see page 5, “Pay limestone markers to place on water spaces”).

Each *remote limestone space* shows a VP penalty. During final scoring, lose the points shown for each space **still visible**.



When using the B-side of the reef board, add the following new scoring category step during final scoring:

Category 5: Remote Limestone Spaces

You **lose** victory points for each **visible remote limestone space** on your reef board (i.e., each limestone space with a penalty that you have not covered with a Lumino). The penalty varies between **-1 VP**, **-2 VP**, and **-3 VP** per remote limestone space. When you lose victory points, move your fish marker backward that many steps on the score track (and, if necessary, give back or turn over your victory point tile if you cross the 50 VP space again).

As usual, the player with the most victory points after the final scoring wins. In case of a tie, the tied player with the most limestone markers on their own reef board wins. If there is still a tie, the victory is shared.

Special Case

No More Luminos in the Bag?

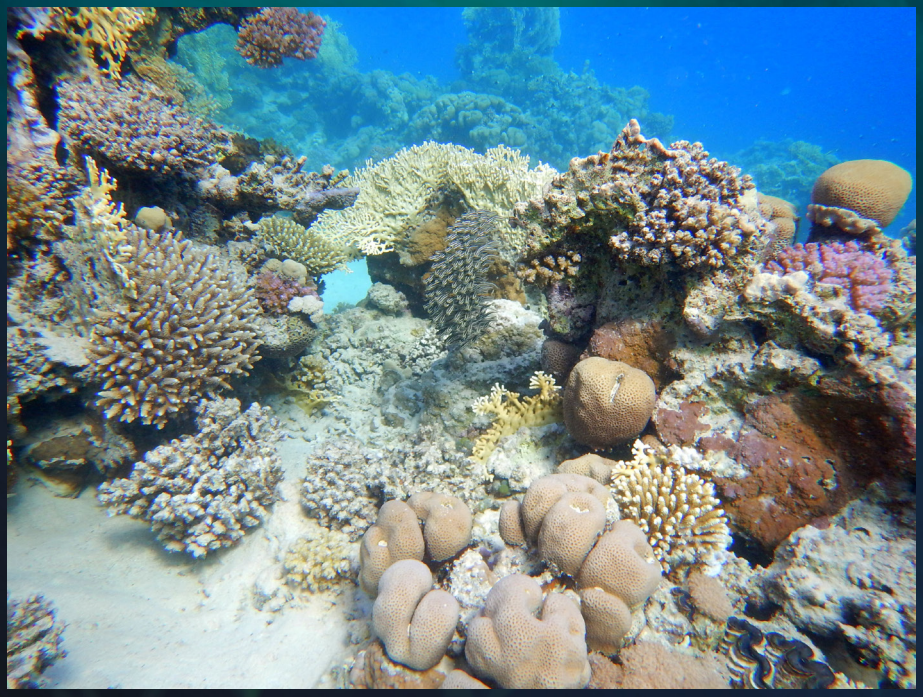
In the rare case that there are no more Luminos in the bag when you need to draw one, proceed as follows:
Take all Luminos from the **emergency stack** and place them in the bag, then continue drawing. If this occurs in the 10th round, continue with the game as usual. If it happens before the 10th round, continue the game until the end of the Scoring Phase in the current round. Then immediately conduct another Scoring Phase. After that, the game ends prematurely, and all players perform the final scoring. If the bag empties again this round, neither the Atoll nor your supplies are replenished.

Save the reefs: How we can shape the future of coral reefs together

In *Lumicora*, you learn about coral and the various animals that play an important role in the coral reef. Just like in the game, in which you place coral tiles to enlarge the reef, environmental organizations such as the Global Nature Fund (GNF) are committed to protecting coral. Coral reefs are extremely important marine habitats and provide food and protection from storm surges and waves for people living near the coast.



The hawksbill turtle grows up to 90 cm long. Photo © Alena Hayer (GNF)



Coral reef with a shoal of striped catfish. Photo © Alena Hayer (GNF)

At first glance, corals look like colorful plants in the ocean, but they are actually animals, more precisely cnidarians. Coral has a soft body and a hard outer shell, much like snails and mussels have a hard outer shell. The calcareous shell serves as protection and forms the hard structure of the coral reef. Fish use the niches and gaps between the corals as hiding places from predators. Sea urchins are the gardeners in the coral reef. They eat the algae and thus protect coral from becoming overgrown.

Even if corals appear robust, they are very sensitive to changes in their environment. This is why it is so important to protect our coral reefs in order to preserve this wonderful and diverse underwater world. Unfortunately, climate change and marine pollution in particular are causing corals to die. Without coral, our fish stocks will decline, jeopardizing the food security of millions of people, especially in the tropics and subtropics. This is why the conservation of coral is so important. The larger and more diverse a coral reef, the more stable the system. Different types of coral (leather coral, black coral, gold coral and stony coral) are represented in the game by differently colored coral tiles. In the game, as in real life, it is good to look after a diverse coral reef.



Close-up of individual polyps. Photo © Alena Hayer (GNF)

Find out more about the projects of the Global Nature Fund:

As a foundation for nature and the environment, the Global Nature Fund (GNF) is committed to the protection and restoration of coral reefs worldwide. The GNF implements initiatives and projects in Sri Lanka and the Maldives to keep coral reefs alive. At the same time, the GNF promotes sustainable fishing practices worldwide, raises awareness for less pollution and greater climate protection - so that our oceans remain healthy.

By buying *Lumicora*, you support environmental protection projects, such as the protection of coral reefs, around the world. Together we can secure the future of coral reefs and preserve their beauty and ecological importance for future generations.

Overview

Lumicora is played over 10 rounds. Each round has an **Action Phase**, in which each player takes a turn, followed by a **Scoring Phase**. After the Scoring Phase of the 10th round, the game ends with a **Final Scoring**.

In the **Action Phase**, starting with the player holding the octopus marker and proceeding clockwise, each player takes a turn. A player's turn consists of the following 4 steps *(see page 4)*:

1) Choose **1 Lumino** from your **personal display** and place it with the other Luminos in the Atoll.

2) Perform **one** of the following actions:

A) Take **limestone markers**

OR

B) Take **1 Lumino** from your **personal display**

OR

C) Take **1-3 Luminos** of a single color from the **Atoll**

3) If there are fewer than 4 Luminos in the **Atoll**, refill it with new ones from the bag.

4) If you added one or more Luminos to your hand in Step 2, place them in your reef *(see page 5)*, while the next player starts their turn.

Once each player has finished their turn, continue with the Scoring Phase.

In the **Scoring Phase**, perform the following 4 steps *(see page 6)*:

1) Each player refills **their personal display** with new Luminos from the bag.

2) Starting with the player holding the octopus marker and proceeding clockwise, each player chooses either to perform a **coral scoring** or to pass.
Coral scoring:
- Choose a color and flip the **scoring tile** that has its coral side facing up to the jellyfish side.
- In each level, score the space showing the **lowest number** in that color.
- Add your scores together and gain that many victory points.

3) If at least one coral scoring was performed in Step 2, the player who was last to score gets the **octopus marker**. Otherwise, the marker stays with its current holder.

4) Move the **turtle marker** to the next space on the round track and start the next round. Once the marker reaches space 10, the last round of the game begins.

The game ends after the Scoring Phase of the 10th round. Now carry out the final scoring *(see page 7)*.

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Game design: Rita Modl
Artwork: Annika Heller
Development: Moritz Bornkast, Peter Eggert
Editing and rule book: Moritz Bornkast, Viktor Kobilke
Translation: Neil Crowley
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www.deep-print-games.com

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61169 Friedberg, Germany.

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