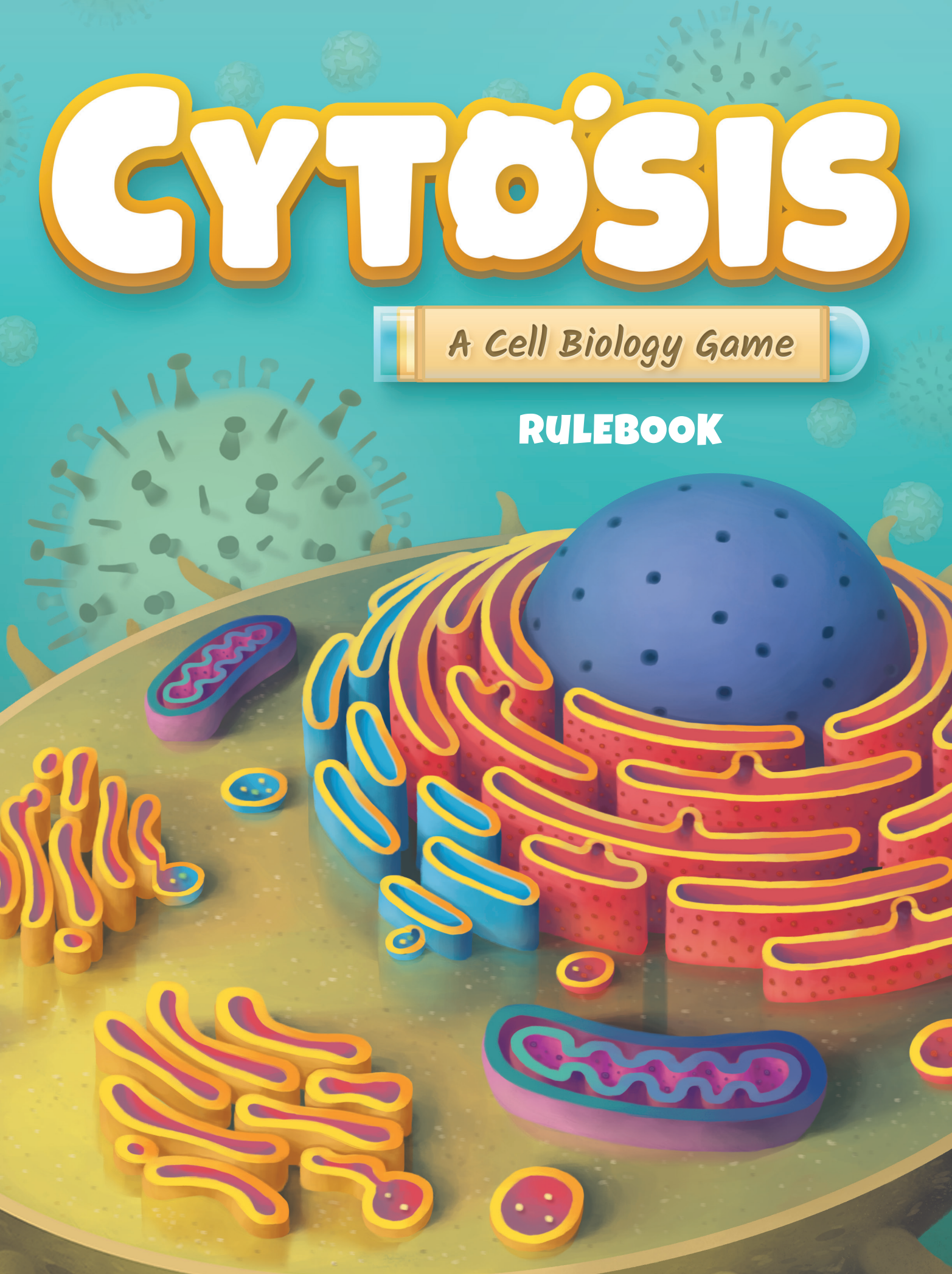
CYTOSIS

A Cell Biology Game

RULEBOOK



Hello Fellow Science Gamers!

I keep growing as a designer year by year and I have ***you*** to thank for that! The first edition of Cytosis has a special place in my heart, but after many hours of playing Cytosis, discussing the game, and reflecting critically about how the experience it offers could be improved, I decided to refine a few things for the 2nd Edition. I am thrilled at how much people have loved Cytosis and that we are able to continue to print Cytosis, and even offer it in multiple languages.

2 Player Board - The 2 player variant of Cytosis has been a big hit, but many people mentioned that it was difficult to remember all the modifications to the board while playing it. So we've included a 2 player side of the board, with the proper number of spots.

Re-designed Rulebook - Many parts of the rulebook have been rewritten, with a number of clarifications that have been incorporated based upon player feedback, and improved graphic design to boot.

Resource Multipliers - All ATP and macromolecules are unlimited. So, we added 5x ATP Tokens and Resource Multipliers that represent 5 of each corresponding macromolecule.

Virus Expansion - Sorting through both the base game and expansion material on first opening the box made learning the game cumbersome. And not everyone wanted the expansion, but was still forced to pay the extra money for it since it was included in the box. So we made the Virus expansion its own separate box and reduced the price of the base game.

Card Modifications - We removed the three Toxicity event cards because they seemed to detract from, rather than add to, the overall experience of Cytosis. We also increased the number of Macromolecules given from the Macromolecule Resource cards and added an addition Goal Card to add some variability.

From the bottom of my heart, thanks to each of you who have helped in the very collaborative process of creating both the 1st and 2nd editions of Cytosis. Cytosis opened the door for a lot of growth at Genius Games. And now we have several more games in the pipeline that are every bit as geeky and every bit as fun. Looking forward to sharing them with you.

Overflowing with appreciation,

John J. Coveyou

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Cytosis: A Cell Biology Game

A game that takes place inside a human cell for 2 - 5 players

Game Summary

Cytosis is a worker placement game that takes place inside a human cell. Players start out with a number of flasks and on their turn, they place one of their flasks on any available location within that cell. Some locations provide players with resources (e.g., mRNA, ATP) and some with actions (e.g., convert resources, purchase cards). Resources are used to build enzymes, hormones, and/or receptors, which score Health Points. The player with the most Health Points at the end of the game wins!

Components

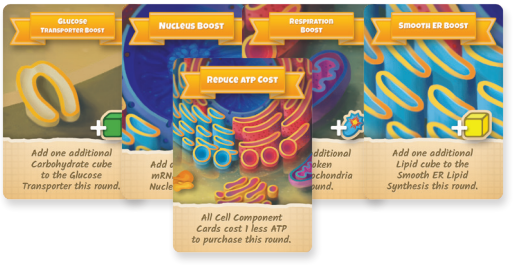
43 Cell Component Cards

- 10 Enzyme Cards
- 6 Protein Hormone Cards
- 6 Steroid Hormone Cards
- 5 Steroid Hormone Receptor Cards
- 5 Protein Hormone Receptor Cards
- 4 Macromolecule Cards
- 7 Alcohol Detoxification Cards

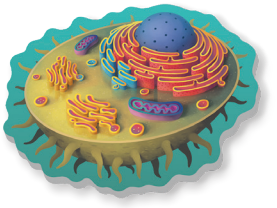
6 Goal Cards

12 Event Cards

- 3 Glucose Transporter Boost Cards
- 3 Nucleus Boost Cards
- 3 Respiration Boost Cards
- 1 Smooth ER Boost Card
- 2 Reduce ATP Cost Cards

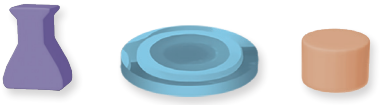


1 First Player Marker



45 Player Pieces

- 20 Flasks
  (4 of each in 5 different colors)
- 10 Transport Vesicle Disks
  (2 of each in 5 different colors)
- 15 Player Markers
  (3 of each in 5 different colors)



2 Grey Flasks

25 ATP Tokens

- 20 Blue ATP Tokens (1 ATP)
- 5 Orange ATP Tokens (5 ATP)

66 Macromolecule Cubes

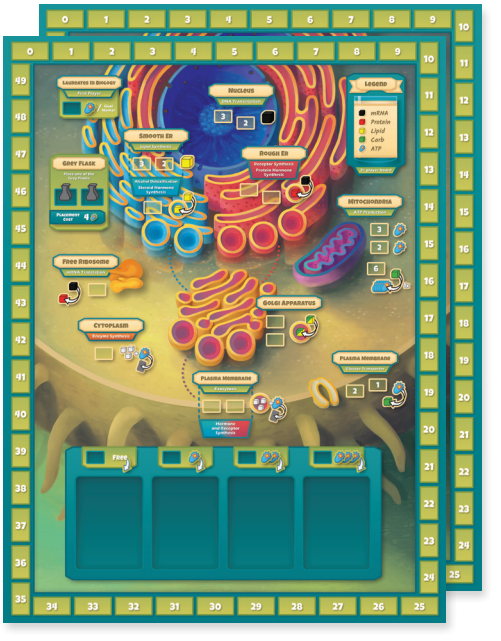
- 18 Black mRNA Cubes
- 18 Red Protein Cubes
- 15 Green Carbohydrate Cubes
- 15 Yellow Lipid Cubes

8 Multipliers

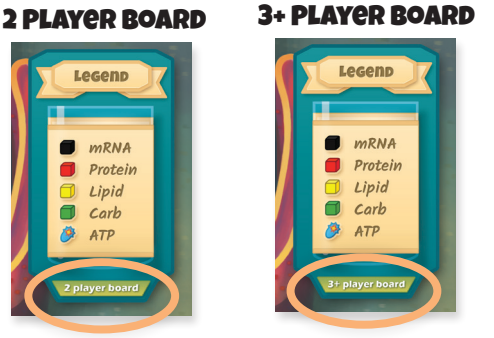
Each Multiplier is worth 5 cubes of the corresponding macromolecule.

- 2 Black mRNA Multipliers
- 2 Red Protein Multipliers
- 2 Green Carbohydrate Multipliers
- 2 Yellow Lipid Tokens Multipliers

1 Double-Sided Game Board



GAME SETUP



1. Place the board on the table with the correct side face up according to the number of players. Separate the **macromolecule cubes** into like colors, placing them in piles near the board. Then, place the **ATP Tokens** in a pile near the board. These 5 piles make up the **general supply**. Next, place the 2 Grey Flasks on the Grey Flask area of the board.

2. Separate the 3 types of cards: Event Cards, Goal Cards, and Cell Component Cards.

3. Randomly select a number of **Event Cards** according to the chart to the right. Shuffle them and then place them face down as a deck above the game board. Place any unused Event Cards back in the box.

4. Randomly select a number of **Goal Cards** according to the chart to the right and place them face up above the game board. Place any unused Goal Cards back in the box.

	NUMBER OF EVENT CARDS	NUMBER OF GOAL CARDS
2 PLAYERS	10	3
3 PLAYERS	10	4
4 PLAYERS	11	5
5 PLAYERS	12	5

5. Shuffle the **Cell Component Cards.** (If playing a 2-player game, randomly remove 3 Alcohol Detoxification Cards and place them back in the box). Now, flip 4 of these cards face up into the 4 slots of the Cell Component Card Area of the board.

6. Deal each player **3 Cell Component Cards.** Each player secretly chooses 2 to keep and shuffles the unchosen one back into the remaining Cell Component Cards to form a deck. Place the Cell Component deck face down to the right of the board.

7. Give each player a set of Player Pieces according to the chart below. Each player's pieces should all be of the same color. Then, each player should place one of their Markers on the "0" on the Health Track (the numeric score track surrounding the game board). This is a player's Health Marker.

2 OR 3 PLAYER GAME	4 Flasks
4 PLAYER GAME	3 Flasks
5 PLAYER GAME	2 Flasks

2 Transport Vesicle Disks

3 Markers (1 Health Marker, 2 Goal Markers)

8. The player who most recently looked into a microscope receives the **First Player Marker.**

9. The first player collects 2 **ATP**, the player to their left collects 3 **ATP**, the next player 4 **ATP**, and so on until all players have collected **ATP**. Each player then collects 2 additional resources (any combination of **ATP**, **black mRNA** or **yellow Lipids**). All resources a player collects throughout the game are added to their personal stock.

YOU ARE NOW READY TO PLAY!

Here's what setup for a 4 player game looks like

Gameplay

*Gameplay is different for a **2 Player game**. See page 14 for modifications.*

Game Summary

Cytosis is played in rounds, each of which is divided into two phases. In Phase 1, players place their flasks to collect resources and take actions with the goal of completing Cell Component Cards and thus scoring Health Points. Once all players have placed all their flasks, Phase 1 ends and Phase 2 begins. In Phase 2, the board will be refreshed and an Event Card will be revealed.

Rounds continue until the last Event Card is revealed. Players play one final round and then add up their total number of Health Points. The player with the most Health Points wins!

Phase 1: Place Flasks

Every round, the player holding the **First Player Marker** will be the first player to take their turn, then play continues clockwise.

On their turn, a player must place exactly 1 of their flasks on any available spot on the board and then immediately collect the resources or take the action associated with that spot. Then, the player to their left (i.e. clockwise) now takes their turn. Turns continue clockwise (with each player placing 1 flask) until all flasks have been placed. *Note: Flasks placed on the board must remain where they have been placed until the board is refreshed in Phase 2.*

Only 1 flask may be placed on each spot. If a spot is occupied with a flask, it is not available for the rest of that round.

> Instead of placing a flask, a player may choose to exhaust their flask by tipping it over and collecting a single **black mRNA,** **yellow Lipid,** or **ATP.** Any exhausted flasks may not be placed that round.

There are 4 types of flask placement spots:

1. **Collecting Resources** (to add to your personal stock)
2. **Purchasing Cell Component Cards** (to add to your hand)
3. **Completing Cell Component Cards** (completed over multiple turns)
4. **Taking the First Player Marker** (and **Placing a Goal Marker** or **Collecting 1 ATP**)

Phase 2: Refresh Board and Reveal Event Card

1. All players should retrieve the flasks they placed during Phase 1 and return the Grey Flasks to the Grey Flask Area of the game board. *(Transport Vesicle Disks and any macromolecules on them should stay on the board.)*

2. Remove the left-most card from the Cell Component Card Area of the board and place it in the Cell Component discard pile. Then, without changing the order of the cards, slide any remaining face up Cell Component Cards to the left-most open slot(s). Now, fill any newly opened slot(s) with cards from the top of the Cell Component deck.

   If there are no cards remaining in the Cell Component deck, shuffle the Cell Component discard pile and place it face down as the Cell Component deck.

3. Now, reveal the top card from the Event deck and follow the instructions on that card. This new Event Card is the only active Event Card. Any Event Cards from previous rounds become inactive.

Ending the Game

Revealing the last Event Card marks the last round of the game. Play through Phase 1 one final time and instead of going through Phase 2, skip directly to ***Scoring***.

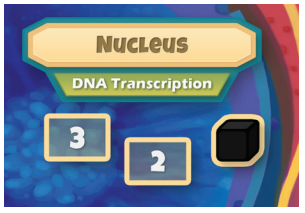
FLASK PLACEMENT SPOTS

The game board contains a number of spots on which players can place their flasks.

1. COLLECTING RESOURCES (TO ADD TO YOUR PERSONAL STOCK)

All placement spots with numbers in them allow players to collect resources in some way from the general supply. The number in each spot indicates how many resources they collect. All resources a player collects are immediately added to their personal stock.

Note: All resources in the game (**macromolecules** and **ATP**) are considered to be unlimited. If the general supply runs out of any resource, players should utilize the 5x Multipliers and orange 5x ATP. If players need more than what the Multipliers can provide, please use other materials as a proxy.

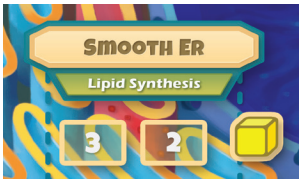


NUCLEUS *(DNA Transcription)*

If a player places on the spot marked with a 3 or a 2, they collect 3 or 2 **black mRNA** respectively.

FREE RIBOSOME *(mRNA Translation)*

If a player places on the **mRNA Translation** spot, they must return any number of **black mRNA** from their personal stock to the general supply and collect the same number of **red Proteins** from the general supply.



SMOOTH ER *(Lipid Synthesis)*

If a player places on the spot marked with a 3 or a 2, they collect 3 or 2 **yellow Lipids** respectively.

PLASMA MEMBRANE *(Glucose Transporter)*

If a player places on the spot marked with a 2, they must pay exactly 2 **ATP** from their personal stock and collect 2 **green Carbohydrates** from the general supply. If a player places on the spot marked with a 1, they must pay exactly 1 **ATP** from their personal stock and collect 1 **green Carbohydrate** from the general supply.

MITOCHONDRIA *(ATP Production)*

If a player places on the spot marked with a 3 or a 2, they receive 3 or 2 **ATP** respectively. If a player places on the spot marked with a 6, they must pay exactly 1 **green Carbohydrate** from their personal stock and collect 6 **ATP** from the general supply.

EXTRA RESOURCES ADDED BY EVENT CARDS

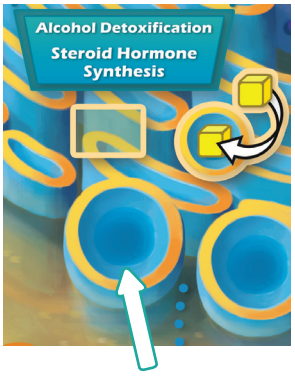
*If an Event Card adds a resource of any type to a location on the Board, that resource is awarded to the first player to place on any spot within that location on the board at no additional cost. (See **Event Cards** for more details.)*

2. PURCHASING CELL COMPONENT CARDS (TO ADD TO YOUR HAND)

If a player places on any of the spots within the Cell Component Card area, they must pay the **ATP** cost (indicated to the right of their flask) and collect the card in the slot just below their flask, placing that card into their hand.

3. COMPLETING CELL COMPONENT CARDS (THESE CARDS ARE COMPLETED OVER MULTIPLE TURNS)

A player must have at least the number of macromolecules required by the Cell Component Card they are completing on their Transport Vesicle Disk, but may have more.



Budding Transport Vesicle Location

SMOOTH ER *(Alcohol Detoxification / Steroid Hormone Synthesis)*

If a player places on the lower portion of the Smooth ER (Alcohol Detoxification or Steroid Hormone Synthesis) they must do one of two things:

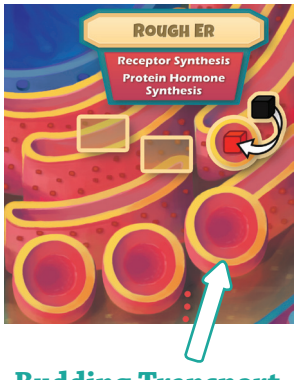
Option 1: Alcohol Detoxification

If a player places to complete an Alcohol Detoxification Card, they must pay the amount of **ATP** shown on the card and then immediately gain 1 Health Point.

Option 2: Steroid Hormone Synthesis

A player takes the first step of completing a Steroid Hormone Card by placing in the Steroid Hormone Synthesis area of the **Smooth ER.** They then:

1. Place one of their Transport Vesicle Disks on an available Budding Transport Vesicle Location (yellow rimmed circles) in the **Smooth ER.**
2. Place a number of **yellow Lipids** (NOT **green Carbohydrates,** these are added in the Golgi Apparatus) from their personal stock onto their Transport Vesicle Disk according to the quantity shown on the Steroid Hormone Card they are trying to complete.



Budding Transport Vesicle Location

ROUGH ER *(Protein Hormone Synthesis / Receptor Synthesis)*

A player takes the first step of completing a Protein Hormone, Protein Hormone Receptor or a Steroid Hormone Receptor Card by placing in the **Rough ER.** They then:

1. Place one of their Transport Vesicle Disks on an available Budding Transport Vesicle Location (yellow rimmed circles) in the **Rough ER.**
2. Return a number of **black mRNA** from their personal stock (according to the Cell Component Card they are trying to complete) for the same number of **red Proteins** from the general supply and place the **red Proteins** on their Transport Vesicle Disk.

*In the **Rough ER,** you **must** start with **black mRNA.** You may not place **red Proteins** from your personal stock.*

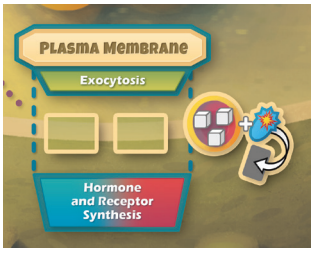
GOLGI APPARATUS

A player takes the second step of completing a Hormone or Receptor Card by placing in the Golgi Apparatus. They then:

1. Move 1 of their Transport Vesicle Disks (and all macromolecules on it) from either the **Smooth ER** or the **Rough ER,** onto an available Budding Transport Vesicle Location in the Golgi Apparatus.
2. Place 1 **green Carbohydrate** or 1 **yellow Lipid** from their personal stock onto that Transport Vesicle Disk, according to the Cell Component Card they are trying to complete.

This spot allows a player to place 1 ***green Carbohydrate*** *or 1* ***yellow Lipid.*** *It does NOT allow a player to trade a* ***green Carbohydrate*** *for a* ***yellow Lipid*** *or vice versa.*

If the active player places on a spot in the ***Smooth ER, Rough ER*** *or* ***Golgi Apparatus,*** *and all Budding Transport Vesicle Locations for that area are filled, 1 Transport Vesicle Disk belonging to the player highest on the Health Track is removed from the board and returned to the player who owns it along with all macromolecules on it (in case of a tie: the player earliest in turn order). The active player must now place (or move) their Transport Vesicle Disk and appropriate macromolecules onto the newly opened Budding Transport Vesicle Location.*



PLASMA MEMBRANE *(Exocytosis)*

A player takes the third and final step of completing a Hormone or Receptor Card by placing in the Plasma Membrane (Exocytosis). They then:

1. Move one of their Transport Vesicle Disks from the Golgi Apparatus, through the Plasma Membrane, and out of the cell.
2. Place the Cell Component Card they are completing face up in front of them.
3. Pay the **ATP** cost indicated on that Cell Component Card, place all the macromolecules from the Transport Vesicle Disk back into the general supply and take back their Transport Vesicle Disk.
4. Gain a number of Health Points as shown on the Cell Component Card just completed.

CYTOPLASM *(Enzyme Synthesis)*

A player takes the final step in completing an Enzyme Card (once a player has all resources indicated) by placing on the spot within the Cytoplasm labeled Enzyme Synthesis. They then:

1. Place the Enzyme Card they are completing face up in front of them.
2. Pay the **ATP** cost and pay a number of macromolecules from their personal stock, as indicated on that Enzyme Card.
3. Gain a number of Health Points as shown on the Enzyme Card just completed.

4. Taking the First Player Marker (and Placing a Goal Marker or Taking 1 ATP)

Laureates in Biology

If a player places on the Laureates in Biology spot, they must:

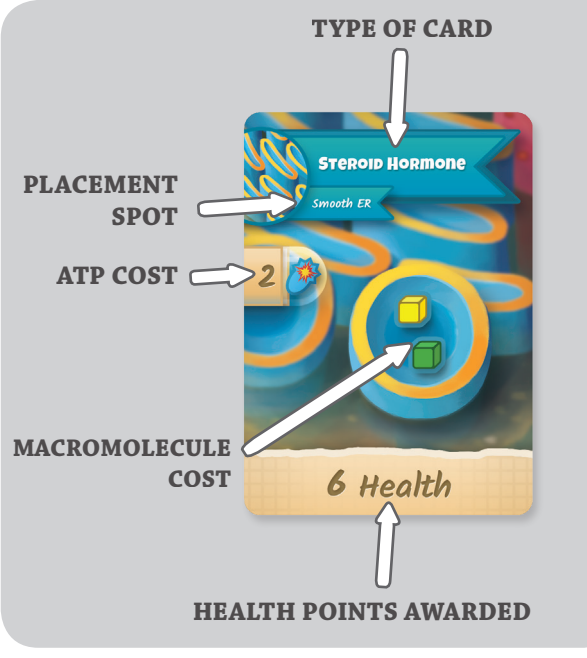
1. Take the First Player Marker (and keep it for all subsequent rounds until it is claimed by another player).
2. Choose to do one of the following:
   - Place 1 Goal Marker on an available Goal Card. *(See **Goal Cards** for details),* ***or***
   - Collect 1 **ATP** from the general supply.

*The first Goal Marker placed on each Goal Card immediately awards that player 3 Health Points. (See **Goal Cards** for details.)*

Cell Component Cards

There are five types of Cell Component Cards: **Hormone Cards, Hormone Receptor Cards, Enzyme Cards, Alcohol Detoxification Cards,** and **Macromolecule Cards.**

Each Cell Component Card (with the exception of the **Macromolecule Cards**) indicates the placement spot required for that card, the **Macromolecule** and/or **ATP** cost needed to complete that card, and the number of Health Points it will immediately score when completed.



The Hormone Receptor Cards may score a player additional points throughout the game *(see **Hormone Receptor Cards** for details)* while Enzyme Cards or Alcohol Detoxification Cards may score a player additional End Game points. *(See **Enzyme Cards** and **Alcohol Detoxification Cards** for details.)* A quick reference for these additional points is shown at the bottom of each card.

Cards in a player's hand are kept hidden from other players until completed, while completed cards should be kept face up in front of the player who completed them. Completed cards will be useful in tracking End Game points.

Hormone Cards

There are two different types of Hormone Cards: Protein Hormones (red background) and Steroid Hormones (blue background).

Hormone Cards are completed over multiple turns:

- First, a player places in the Smooth ER for Steroid Hormones or the Rough ER for Protein Hormones. *(see **Smooth ER** or **Rough ER** for more details).*
- Second, for both Steroid Hormones and Protein Hormones, a player places in the Golgi Apparatus. *(see **Golgi Apparatus** for more details).*
- Finally, a player places in the Exocytosis area of the Plasma Membrane. *(see **Plasma Membrane (Exocytosis)** for more details).*

A DETAILED EXAMPLE OF HOW TO COMPLETE A PROTEIN HORMONE CARD

This example assumes the player has already collected **black mRNA** *previous to their first placement, a* **green Carbohydrate** *previous to their second placement, and enough* **ATP** *previous to their third and last placement.*

For the first flask placement, place in the **Rough ER**, and do all of the following:

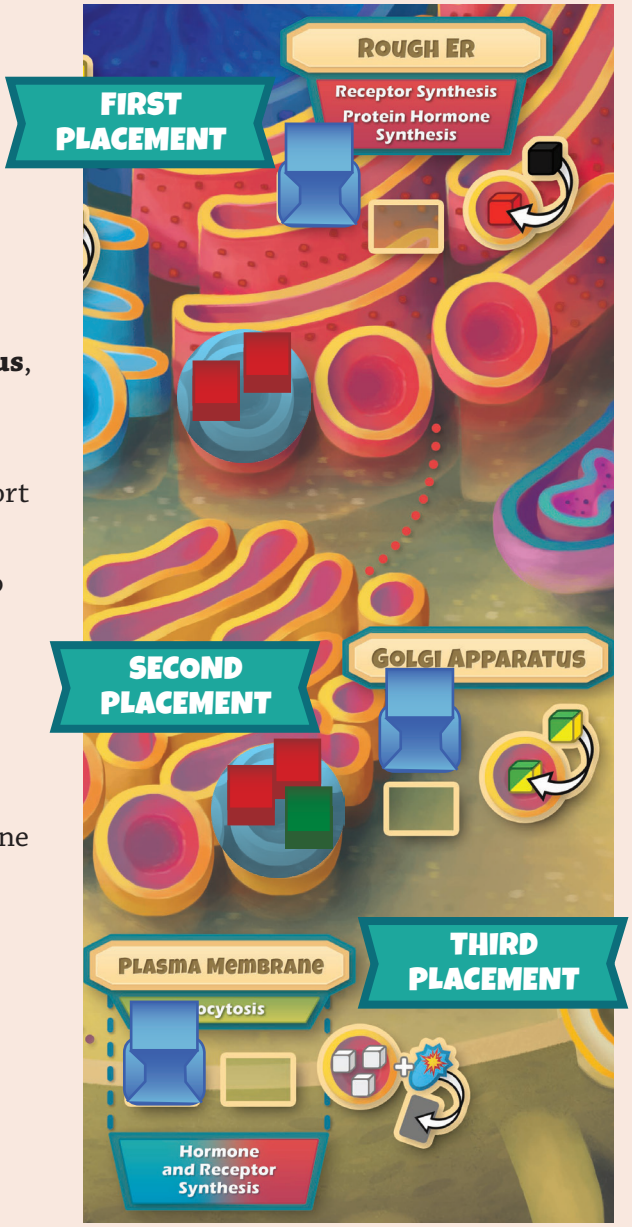
1. Place your Transport Vesicle Disk on an open Budding Transport Vesicle Location.
2. Trade 2 **black mRNA** from your personal stock for 2 **red Proteins** from the general supply, and immediately place the **red Proteins** onto your Transport Vesicle Disk

For the second flask placement, place in the **Golgi Apparatus**, and do all of the following:

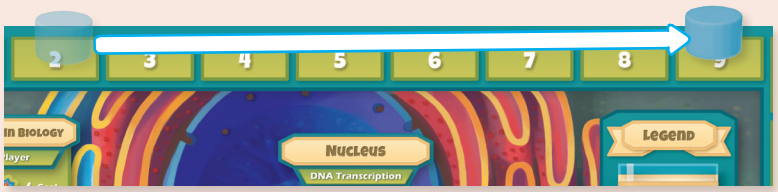
1. Move your Transport Vesicle Disk (and all **macromolecules** on it) from the **Rough ER** into an available Budding Transport Vesicle Location in the **Golgi Apparatus.**
2. Place 1 **green Carbohydrate** from your personal stock onto that Transport Vesicle Disk.

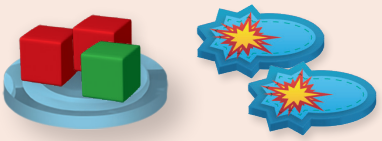
For the third flask placement, place in the **Exocytosis** area of the **Plasma Membrane**, and do all of the following:

1. Move your Transport Vesicle Disk (and all macromolecules on it) from the Golgi Apparatus through the Plasma Membrane and out of the cell.
2. Place the Protein Hormone Card you are completing face up in front of you.
3. Pay the 2 **ATP** and place the macromolecules from that Transport Vesicle Disk back into the general supply. Take back your Transport Vesicle Disk.
4. Gain 7 Health Points!



CONGRATULATIONS, YOU'VE JUST COMPLETED A PROTEIN HORMONE CARD!





+7 HEALTH POINTS

Hormone Receptor Cards

There are two types of Hormone Receptor Cards: Steroid Hormone Receptor Cards and Protein Hormone Receptor Cards. Both types of Hormone Receptor Cards are completed in the same way as the Hormone Cards, with two differences. First, BOTH Hormone Receptor Cards begin in the **Rough ER.** Second, Steroid Hormone Receptor Cards are the only cards that will receive a **yellow Lipid** (rather than a **green Carbohydrate**) in the Golgi Apparatus.

Completed **Hormone Receptor Cards** score a player Health Points any time new Hormone Cards are completed.

Any time an opposing player completes a **Protein Hormone Card,** all players with a completed **Protein Hormone Receptor Card** will gain 2 Health Points for each **Protein Hormone Receptor Card** they've completed.

Any time an opposing player completes a **Steroid Hormone Card,** all players with a completed **Steroid Hormone Receptor Card** will gain 2 Health Points for each **Steroid Hormone Receptor Card** they've completed.

For example, if Player 2 has completed 2 Steroid Hormone Receptor Cards, they will receive 4 Health Points each time an opposing player completes a Steroid Hormone Card.

Player 1 completes a Steroid Hormone

Player 2 receives 4 health points

Also, any time a player personally completes a **Protein Hormone Card,** they will score 1 additional Health Point for each **Protein Hormone Receptor Card** they have already completed. Likewise, any time a player personally completes a **Steroid Hormone Card,** they will score 1 additional Health Point for each **Steroid Hormone Receptor Card** they have already completed.

Enzyme Cards

Enzyme Cards do NOT require the use of a Transport Vesicle Disk. To complete an Enzyme Card:

First, a player must place a flask on the Free Ribosome spot and trade **black mRNA** from their personal stock for the same number of **red Proteins** from the general supply. (Note: these **red Proteins** are now part of their personal stock and can never be placed on a Transport Vesicle Disk.)

Then, a player must place on the Cytoplasm spot and do all of the following:

1. Place the Enzyme Card they are completing face up in front of them.
2. Pay the required **ATP** and **macromolecules** from their personal stock to the general supply.
3. Immediately gain the Health Points shown on the completed Enzyme Card.

Completed Enzyme Cards should be overlapped and flared so all other players can see them. Sets of Enzyme Cards will score additional points at the end of the game, as shown on the bottom of each Enzyme Card *(see **Scoring** for details).*

Alcohol Detoxification Cards

Alcohol Detoxification Cards are completed by placing a flask in the Alcohol Detoxification spot (within the **Smooth ER**) and paying the **ATP** cost indicated on that card. After completing an Alcohol Detoxification Card, a player will gain 1 Health Point.

At the end of the game, the player(s) with the most Alcohol Detox will gain additional points *(see **End Game Points from Alcohol Detoxification Cards** for more details).*

Macromolecule Cards

Macromolecule Cards may be kept in a player's hand and played at any time during a player's turn. Once the card is played, that player should immediately take the number of macromolecules shown on the card and place that card in the Cell Component discard pile (Macromolecule Cards are NOT considered completed cards for end game scoring).

Goal Cards

When a player places on the Laureates in Biology spot, they may choose to place a single Goal Marker on any available Goal Card. Once a Goal Marker has been placed, it may never be moved, and a player may never place both of their Goal Markers on the same Goal Card. A maximum of two Goal Markers may be placed on each Goal Card.

First player to place immediately scores 3 points

Goal Cards may score a player points in two ways:

1. During the Game: The first Goal Marker placed on each Goal Card immediately awards that player 3 Health Points. (The second Goal Marker placed on a Goal Card awards no immediate Health Points.)
2. During End Game Scoring: If a player placed a Goal Marker on a Goal Card, they will score End Game points according to the description on that Goal Card.

Event Cards

During Phase 2 of each round, a single Event Card will be flipped face up and will affect the game in some way.

There are two types of Event Cards: **Boost** and **Reduce ATP Cost.**

Boost

A Boost Event Card adds 1 resource to a specific area of the board. That resource is awarded for free to the first player to place on any spot within that location, in addition to the resources that spot usually awards. Any resources added to a specific area of the board remain in that area until awarded.

Reduce ATP Cost

A Reduce ATP Cost Event Card reduces the cost of each Cell Component Card purchased that round by 1 **ATP.** If a player places on the Free spot when this Event Card is active, they may also take 1 **ATP** from the general supply.

GREY FLASKS

Before a player places their flask during their turn, they may pay 4 **ATP** to take a Grey Flask **from the Grey Flask Area** and place it on any spot on the board (available or unavailable) and then take the action associated with that spot. A player will then take their normal flask placement.

> ***Restrictions:*** *A player may pay to place* **only 1** *Grey Flask per turn and must be able to take the action associated with that spot. Only Grey Flasks in the Grey Flask area are available for this action.*

ENDING THE GAME

The final round is signaled when the **last** Event Card is flipped face-up. Players should play one last time through Phase 1 and then skip directly to **Scoring.**

SCORING

At the end of the game, players will score additional End Game points for **macromolecules** still in their personal stock, completed **Alcohol Detoxification Cards,** completed **Enzyme Cards,** as well as any **Goal Cards** on which they've placed any of their Goal Markers during the game. Players should move their Health Marker along the Health Track for all End Game Points earned.

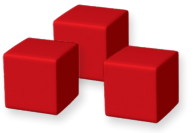
END GAME POINTS FROM MACROMOLECULES

Before scoring macromolecules, a player may collect all macromolecules remaining on any of their Transport Vesicle Disks still on the board and add these to their personal stock.

Macromolecules in a player's personal stock score a player points for each set of:

4 Black mRnA
1 POINT

4 Yellow Lipids
1 POINT



3 Red Proteins
1 POINT

2 Green Carbohydrates
1 POINT

END GAME POINTS FROM ALCOHOL DETOXIFICATION CARDS

For scoring Alcohol Detox in a 2 player game, see ***Scoring Differences*** *on page 14.*

The most Alcohol Detox is determined by adding together the number of **ATP** on all of the Alcohol Detoxification Cards completed by that player. A player must complete at least 1 Alcohol Detoxification Card to gain end game points in this way. End Game Points are awarded according to the chart to the right.

ALCOHOL DETOX	HEALTH POINTS SCORED
MOST	8
SECOND MOST	5
THIRD MOST	2

For example, a player who built 3 separate Alcohol Detoxification Cards requiring 2 **ATP** would have an equal amount of Alcohol Detox as the player who built 2 Alcohol Detoxification Cards both requiring 3 **ATP.**

In case of a tie, the tying player with the **most completed** Alcohol Detoxification Cards wins. If there is still a tie, tying players should add the points for their tied position and the position directly below it, then divide those points equally between them (rounding down to the nearest whole number.) In case of a three way tie, add the position of those tying players and all positions below it, and divide those points equally among the tying players, again rounding down.

Two players tied for 2nd
current position (5) + position below (2) = 7
Divide by 2 players = 3 points

End Game Points from Enzyme Sets

Sets consist of Enzyme Cards of different colors. Any sets of Enzyme Cards a player has completed during the game earn End Game points according to the table below:

Number of Unique Enzymes Completed	Health Points Scored
2	2
3	5
4	9
5	14

3 Completed Enzyme Cards

+5 POINTS DURING END GAME SCORING

Two Enzyme Cards of the same color may not belong to the same set; however a player may score points for two sets.

End Game Points from Goal Cards

If a player has placed a Goal Marker on a Goal Card, they will score End Game points according to the description on that Goal Card. Each player should reference the Goal Card(s) on which they have placed their Goal Marker(s) for details on points scored.

Final Scoring

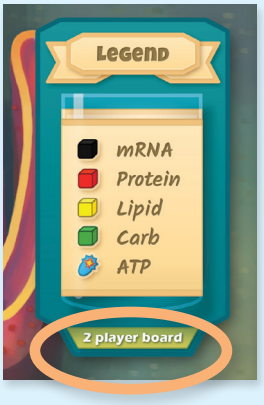
Whoever has the most total Health Points wins the game!

If there is a tie, the player with the most completed Cell Component Cards wins (not including **Macromolecule Cards**). If there is still a tie, the tying player with the most ATP remaining in their personal stock wins the tie. If there is still a tie, the player with the First Player Marker (or closest in turn order to them) wins the tie.

2 Player Rule Modifications

Game Board

The 2 Player side of the game board has a reduced number of flask placement spots.



Gameplay Differences

REMOVE THE 2 LEFT-MOST CELL COMPONENT CARDS

When refreshing the board in Phase 2, instead of discarding the 1 left-most Cell Component Card from the Cell Component Card Area, discard the 2 left-most cards.

Scoring Differences

END GAME POINTS FROM ALCOHOL DETOXIFICATION CARDS

The player with the most Alcohol Detox will gain 5 Health Points, and the player with the second most Alcohol Detox will gain 2 Health Points (ignore the 8 point position). In case of a tie, each player receives 3 points.

CYTOSIS - GAME IN A NUTSHELL

PHASE 1

Starting with the player holding the First Player Marker, each player must place exactly 1 of their flasks on any available spot on the board and then immediately collect the resources or take the action associated with that spot. Once all flasks have been placed, move to Phase 2.

Take First Player Marker (and get 1 ATP - ***OR*** - place a Goal Marker)

Collect yellow Lipids

Collect black mRNA

Convert black mRNA into red Proteins and put them on your Disk (first step for Protein Hormones/ all Receptors)

Put yellow Lipids on your Disk (first step for Steroid Hormones) - ***OR*** - complete Alcohol Detoxification Cards

Collect ATP ***-OR-*** Convert 1 Carb to 6 ATP

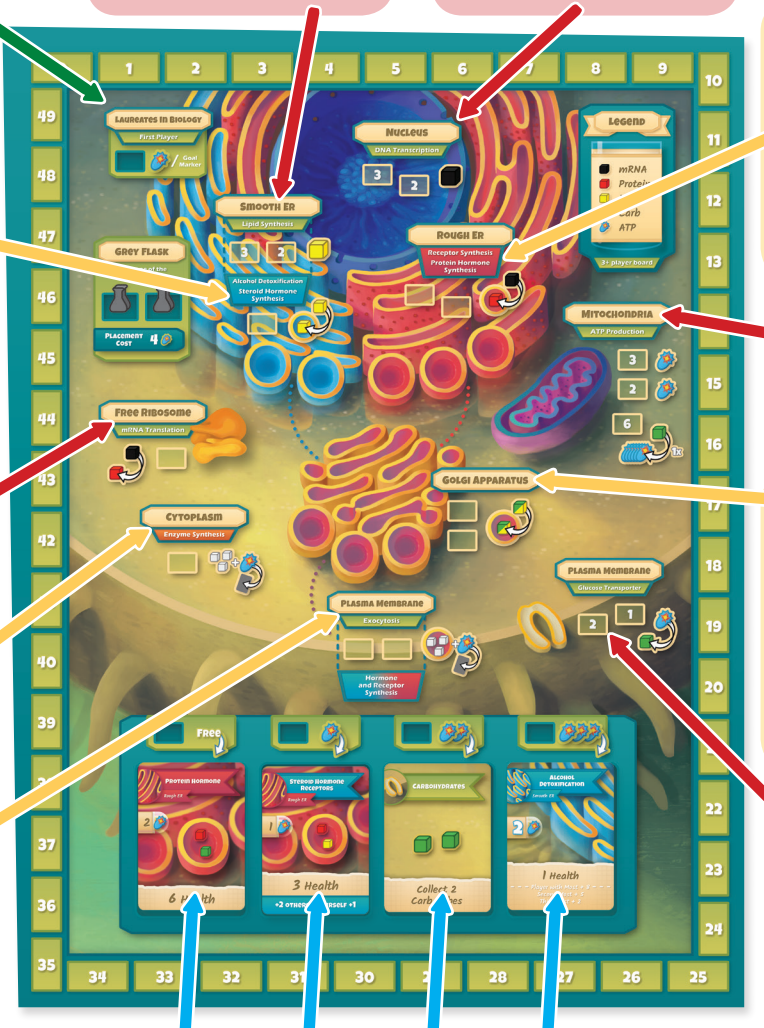
Convert black mRNA into red Proteins (only for Enzymes)

Move your Disk down and place on it 1 yellow Lipid or 1 green Carb on it - ***do NOT convert.*** (second step for all Hormones /all Receptors)

Pay all resources to complete Enzyme Cards

Move your Disk down and pay resources to complete a Hormone or Receptor Card (third step)

Convert ATP to green Carbs



Pay ATP, then add a card to your Hand

- Collecting Resources
- Purchasing Cards
- Completing Cards
- Taking First Player

PHASE 2

All players retrieve their flasks.

Remove left-most card from Cell Component Card area. Slide remaining cards to left-most open slots. Refill all opened slots with cards from deck. Reveal top card from the Event Deck and follow its instructions.

A new round begins, return to Phase 1.

END OF GAME

Repeat phases until last Event Card is revealed. For final round, play only Phase 1 and then jump to "***Scoring***" (page 13).

Player with the most Health Points wins the game!