

UNDER GROVE



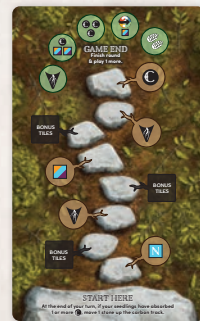
For over 300 million years, trees have traded with fungi in underground symbiotic relationships known as mycorrhizas (my-co-rise-ahs). Trees offer some of the carbon they photosynthesize in exchange for nutrients that the fungi extract from the soil. Scientists continue to make new discoveries about this hidden world, including hints that some of the carbon seems to travel through the fungal network and into the trees' seedlings.


Elizabeth Hargrave & Mark Wootton


A game for 1 to 4 players, ages 10+


In this game, you will play a mature Douglas-fir tree in the Pacific Northwest of North America. Your goal is to establish seedlings and help them successfully grow into trees. At the end of the game, the player who has grown the set of seedlings with the most valuable symbiotic relationships will win.


Components



50 wooden black  Carbon discs


24 wooden blue  Nitrogen cubes

24 wooden orange  Phosphorus cubes

24 wooden purple  Potassium cubes



16 Goal Track discs
(4 per player)


1 Scorepad 



16 Activation tokens
(4 per player)

16 Bonus tiles

48 Mushroom tiles

1 Solo AI mat 



1 Carbon Track
2 point token

4 Carbon Track
discs
(1 per player)

1 Starting Mushroom
tile

30 Solo AI cards

Setup

1 First Player: Randomly select a first player and give them the First Player marker.

Quick Sprout guides: If this is your first game, hand out the Quick Sprout guides to each player, giving number 1 to the First player. Then hand the rest out clockwise, in numerical order, to the other players. (Quick Sprout guides are described on page 4.)

2 Resource supply: Create a shared supply of Carbon, Nitrogen, Phosphorus, and Potassium (C, N, P, and K).



Quick Sprout: Instead of shuffling and drawing tiles as in Step 3, give each player the three Mushroom tiles marked with their player number (1, 2, 3 or 4) in the top left corner. These form their starting hand of Mushrooms. Then shuffle the remaining tiles, place them face down in piles within easy reach, and go to Step 4.

Example: Player 1's three Starting Mushrooms:



Mushroom supply: Shuffle the Mushroom tiles and place them face down in piles where all players can reach them.

3 Starting hand Mushrooms: Each player draws 3 Mushrooms from the supply, keeping them hidden from other players. (Skip this if you are using Quick Sprout guides.)



4 Forest: Place the Starting Mushroom tile in the center of the table, leaving room for the players to build the Forest as they add more Mushroom tiles.



5 Carbon: Place 1 C from the supply on each of the 4 outer Mushrooms.

Quick Sprout: For **Step 6**, in place of choosing colors, give each player the Player board, Seedling, Root, and Tree tokens in the color that matches the color on their Quick Sprout guides.

6

Player boards: Each player takes a Player board and puts the following items in the matching color on their tree:

- 6 Seedling tokens
- 18 Root tokens
- 4 Tree tokens

7

Activation tokens: Each player puts 4 Activation tokens color side up (ready) on the top of their board.



8

Starting resources: Each player takes the following resources from the supply and places them on the designated spots of their board:

- 4 Carbon
- 2 Phosphorus
- 2 Nitrogen
- 2 Potassium

9

Carbon Track: Place the Carbon Track board off to the side of the play area.

10

Bonus tiles: Shuffle the Bonus tiles and deal a number face down to each indicated square on the Carbon Track according to the number of players:

- 2 & 3 players - **3 tiles per square**
- 4 players - **4 tiles per square**

Put the unused tiles back in the box unseen. Put the Carbon Track 2 point token here:



11

Carbon Track discs: Place each player's Carbon Track disc on the Start Here space.

12

Goal cards: If this is your first game, or if you are using the **Quick Sprout** guides, use the 3 Goal cards that say, "**Starting Goal.**" Otherwise, shuffle the Goal cards and deal 3 next to the Carbon Track (choose which side to show at random).

13

Goal Track discs: Place each player's Goal Track disc on the zero of each Goal card.

Quick Sprout guides



Quick Sprout guides are **not a replacement** for the rulebook, which you should read to **understand the rules** and **teach** the game.

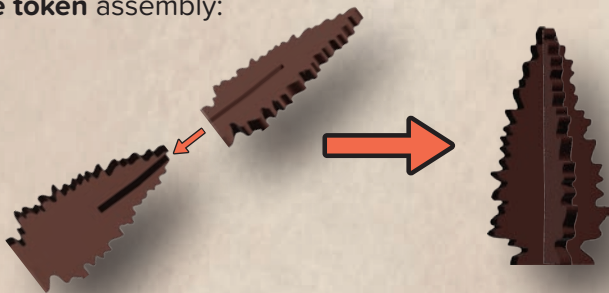
The guides are designed to lead new players through their first 4 turns, teaching core concepts of the game along the way.

Many actions in these guides are dependent on other players' actions. If you are going to use the Quick Sprout guides, all players need to commit to following them for the first 4 turns.

Players should take their turns in clockwise order, as they would in a normal game, following the directions on their guide. Everyone should pay attention to the actions other players take during their first 4 turns, as they may demonstrate actions and options not shown on their own guides.

After everyone has taken the first 4 turns, you may want to review the scoring rules and the Game End trigger and answer any questions players have. Then continue the game with the players now making their own decisions each turn.

Tree token assembly:



Starting Positions

Quick Sprout: Instead of placing Seedlings and Roots as described below, each player, in clockwise turn order, will follow the instructions for placement on their Quick Sprout guide.

In turn order, players choose a position for their first Seedling in the Forest for free. When it is your turn to choose:

- Place 1 **Seedling** on a corner of the center Earthlover tile.
- Place 1 **Root** on the Earthlover tile, next to that Seedling.




(Player 1 has taken the northeast corner, and Player 2 has chosen the southwest corner.)




- Then, in a **2 or 3 player** game, place Seedlings from the unused player colors in the 1 or 2 empty corners of the Earthlover tile (these corners cannot be taken during the game).


Overview


You are playing from the point of view of a mature Douglas-fir tree trying to get your offspring established. You will be placing your Seedling and Root tokens out into a shared Forest area made of Mushroom tiles (**Reproduce** and **Partner**).

Your Roots give you access to trade with Mushrooms for resources (**Activate**).

At the end of the game, your Roots will score if you have Absorbed enough  (**Absorb**).

- Seedlings with 1  score 1 of their Roots.
- Seedlings with 2  score 2 of their Roots.
- Seedlings with 3  become a Tree and score all of their Roots (maximum 4 Roots).

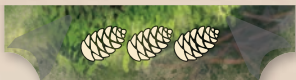
When you score a Root, it is worth the points () printed on the Mushroom tile that it's on.

As you Absorb , you will move up the Carbon Track, gaining rewards. Play continues until one player has advanced beyond the last stone on the Carbon Track, claiming a green reward. This triggers game end (p. 14). When the end of the game has been triggered, continue the current round until the last player has acted, then starting with the first player, each player takes one final action in turn order.

All points are counted at the end of the game. The player with the most points wins (p. 14).



Each Douglas-fir seed cone represents 1 point.



This Mushroom is worth 3 points.




This Mushroom is worth 2 points.

Turn Summary

1. Perform one Action

- Choose one action to perform from these five:
 - **Activate** (p. 6)
 - **Absorb** (p. 8)
 - **Reproduce** (p. 10)
 - **Partner** (p. 12)
 - **Photosynthesize** (p. 12)

2. Carbon Track (p. 9)

- If you Absorbed 1 or more  this turn, move up the Carbon Track 1 space.

3. Goal Progress (p. 13)

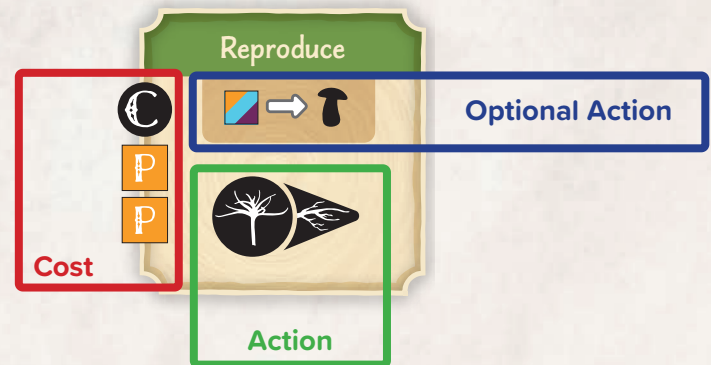
- If you made any progress on a Goal card, mark it with your Goal Track discs on the Goal card.

4. Hand Size

- Draw back up to 3 Mushroom tiles in hand.

Actions

Each action is described in more detail on the following pages. You cannot take more than one action in a turn unless a Mushroom ability gives you another action. In general, the parts of an action are:





Cost - Required resources or Activation token flip.

Optional Action (*brown-shaded boxes*) - You *may* perform this action in the order shown on your Player board.

Action - The action that must be performed.












Action: Activate

Nitrogen, phosphorus, and potassium are essential to plants. Nitrogen is important for leaves, phosphorus for flowers and seeds, and potassium for transporting sugars.

Throughout the game, you will give  to Mushrooms in exchange for nutrients and other benefits. (Note that some will give you benefits without charging you  and others may require other resources as their cost, paid to the supply.) Mushrooms have a **cost** and an **ability**:



Cost: To Activate a Mushroom, you *must* have a Root on that tile. In addition, pay the cost printed on the Mushroom tile:

- : Flip the **ready** Activation token on your Player board that matches the Mushroom type to its **used** side.
- : Pay 1  *onto the Mushroom tile* for each  shown. (You are trading  with the Mushroom for the resources or ability it is giving you.) A Mushroom tile can have an unlimited amount of  on it.
- : Pay 1 , , or  (of your choice) to the supply for each  shown.

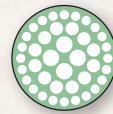
Ability: Gain the benefit of the Mushroom tile's ability. Mushroom tile abilities are described in detail on p. 24.

Activation tokens

There are 4 Mushroom types in the game. They are grouped based on some basic physical characteristics:



Mushrooms with a ring or cortina on their stem




Mushrooms with pores or teeth



Mushrooms with gills (and no ring)



Mushrooms with other shapes, such as cups and corals

You have 1 Activation token for each type of Mushroom. You can use these tokens to Activate Mushroom tiles and also to move and/or Absorb  (p. 8).



All Activation tokens have a **ready** side (color) and a **used** side (gray):



= ready



= used

When you use a token, flip it over to its used  side. You may not use that token again until you flip it back to the ready  side. You will ready all tokens when you Photosynthesize (p. 12). Many Mushroom abilities also ready specific tokens.

Costs usually include flipping an Activation token to its used side with iconography like this:



= flip blue token to its used side



= flip any token to its used side

Some abilities allow you to flip one or all Activation tokens to their ready side, with iconography like this:



= flip blue token to its ready side



= flip any token to its ready side



= flip all your used tokens to their ready side

Ongoing abilities

Some Mushrooms have an ability that says, “ONGOING.” You do not need to Activate these ongoing abilities. Instead, they boost another action you might perform. You must have at least 1 Root on them to gain the benefit of their ability; additional Roots will not increase that benefit.

Activation Example 1: Fly Agaric and 3 other starting Mushrooms have similar effects.



Prerequisite:

- You must have a **Root** on Fly Agaric to Activate it. Brown may Activate the Fly Agaric, but Green cannot.

Cost:

- : Flip your ready to its used side.
- : Place 1 from your Player board onto Fly Agaric.

Ability:

- : Gain 1 and 1 from the supply to your Player board.
- : If your green token is used () , flip it to its ready () side.

Activation Example 2: Earthlover is a unique Mushroom that requires no resources to be paid for Activation, but it still uses your action for the turn. It also has an Ongoing ability that replenishes the Forest with when the last is Absorbed.



Cost paid:
No resources.

Ability gained:

and may trade up to any 2

Prerequisite:

- Each player starts the game with a **Root** on Earthlover, so everyone may Activate it.

Cost:

- No resource or activation cost.

Ability:

- : Gain 1 cube of your choice (, , or) from the supply to your Player board.
- \rightarrow : You may trade up to 2 resource cubes from your Player board for the cubes of your choice from the supply. They do not need to match.

Ongoing:

- At the end of each player's turn, if there is no on any Mushroom tile, place 1 on each of the 4 Mushrooms adjacent to Earthlover (North, East, South, and West).

For all other Mushrooms: See the back of this rulebook for a full glossary of all the Mushroom abilities.

Action: Absorb

Fungi keep most of the carbon that trees give them, but they appear to redistribute some – possibly to keep their trading network strong. This redistributed carbon is small compared to what a tree photosynthesizes for itself, but it may be an important boost for young seedlings.

Seedlings need ☹️ for their Roots to score points. Using the Activate action (p. 6), players will often contribute ☹️ to Mushroom tiles when Activating them. The Absorb action allows your Seedlings to Absorb this ☹️ through one of its Roots.

There may not always be ☹️ available on the Mushrooms where you have Roots. You may use the Optional Action to pay extra to move a ☹️ before Absorbing it.



Cost:

- ☹️: Flip any **ready** Activation token to its **used** side.
- 🎲: Pay any 1 cube of your choice to the supply.

Optional Action: Move ☹️

- You can only move the 1 ☹️ that you plan to Absorb (or the 2 ☹️ when using a Mushroom ability that allows you to Absorb 2 ☹️).
- To move a ☹️, determine how far it must move to get to the Mushroom you want to Absorb it from. ☹️ only moves orthogonally from Mushroom to Mushroom (up, down, left, or right—no diagonals).
- For each mushroom you move ☹️ to, you must either:
 - 🎲: pay any 1 cube of your choice to the supply, or
 - ☹️: flip any **ready** Activation token to its **used** side.

- You may pay any combination of 🎲 and ☹️ per Mushroom the ☹️ is moved to.
- You do not need to have a Root on the Mushroom where the ☹️ starts, only on the Mushroom that you ultimately Absorb it from.
- There are Mushroom powers that let you Absorb 2 ☹️ when you Activate them. In that case, you must pay separately for each ☹️ that you move before Absorbing; they do not automatically travel together.

Action: Absorb


- One of your Seedlings Absorbs 1 ☹️ from a Mushroom where it has a Root. Take the ☹️ off the Mushroom and place it on the Seedling.




- Note: The only way to Absorb more than 1 ☹️ on your turn is to use a Mushroom power that allows you to do so. You cannot pay extra to Absorb more than 1 ☹️ on your turn with this Absorb action.
- Move your **Carbon Track** disc up 1 stone on the Carbon Track and gain the benefit shown there (p. 9).

***Note:** In our abstracted forest, fungi are each shown on a single tile. In reality, their root systems (known as mycelia (mahy-see-lee-uh)) can stretch hundreds or even thousands of meters under the forest floor, connecting distant trees in ways we are unable to depict in this play space. As far as we know, carbon does not pass from one fungus to another, and different fungi generally do not trade with each other.*

Carbon Track





On each turn that you Absorbed  (through the Absorb action or a Mushroom that gives you one or more Absorb actions), move your Carbon Track disc 1 stone up on the Carbon Track.


Immediately take the benefit shown on that stone.


Note: You **move only 1 stone** on the Carbon Track, even if you Absorbed 2 or more  in your turn.



Stones **2**, **4**, and **6** have face-down Bonus tiles on them.



- When you reach a Bonus tile stone on the track, look at the tiles, keep 1, and put the others back face down.
- Keep your token face down. You may reveal and then discard it at any time to gain the benefit it shows. If the token gives , reveal it during scoring at the end of the game.
- The types of benefits on the tiles are a resource, 2 , 1 , and a one-time ability to ready all your Activation tokens .


When a player moves past stone **8** (which gives a ):

- They place their token on 1 of the 5 green spaces and take the reward shown there. Other players who reach the end must choose a different space. The  may be added to a player's board as a scoring reminder.
- The game end is triggered. (See Game End, p. 14.)



Example: Brown Absorbs some  this turn, and moves up 1 stone. They place 1 Root on 1 of their .





Absorb Example:


White would like to Absorb the  from Fly Agaric to their Seedling, but they don't have a Root there. They will use the Optional Action to move it first.




Cost: They flip their ready  Activation token, and pay 1  to the supply from their Player board.

Optional Action: They flip their ready  Activation token and move the  from Fly Agaric to Earthlover.




Action: They Absorb the  from Earthlover to their Seedling.






Carbon Track: They move their Carbon Track disc up 1 stone on the Carbon Track board, secretly look at the 3 Bonus tiles and choose to take the 2  tile, then put the other 2 back.



Strategy Tip: In a sense, the Carbon Track is a race. If you finish first you've likely transferred  more often than the other players. That usually means more of your Roots are going to score.




Making a Tree

If, after Absorbing, your Seedling now has 3  on it, return the 3  to the supply and replace them with a Tree, which is placed on top of your Seedling token.

Trees give you a scoring boost at the end of the game. A Seedling with 2  scores 2 of its Roots, but a Tree can score every Root it has.



Note that you may make a Seedling into a Tree even if it has only 1 Root, but it is usually more efficient to grow Roots around your Trees by the end of the game.

You are limited to making 4 Trees in the game. In the very unusual case that you have made 4 Trees and the game has not ended, your remaining Seedlings may Absorb 3  or even 4 . They will score 1 Root per .

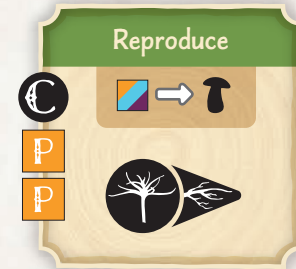
Note: You do not get the Seedling back that you place the Tree on. You can have no more than 6 Seedlings and/or Trees in play.



Action: Reproduce

Mature Douglas-firs produce cones that open to release dozens of seeds on the wind. By the end of their first year, successful seedlings usually have a mycorrhizal relationship with at least one fungus. Seedlings that do not have these relationships often fail to thrive.


You start the game with only 1 Seedling in the Forest. This action is how you'll add more Seedlings to the Forest.



Cost:

- Pay    to the supply.

Optional Action: Place a Mushroom (p. 11)

- You may choose to pay any 1  to the supply to place 1 Mushroom tile from your hand into the Forest.

Action: Place 1 Seedling with 1 Root

- Place one of your Seedlings from your Player board on **any** unclaimed corner in the Forest.
 - Your seeds are wind-borne: New Seedlings do not need to be near your other pieces.
 - Once placed, Seedlings never move.
 - No other player can use the same corner.
- Add a Root **touching** the Seedling you just placed. The Root must go on one of the Mushrooms that the Seedling is touching.

Placing a Mushroom

The Reproduce and Partner actions are the only ways to add new Mushroom tiles to the Forest. Both of these actions include the option to pay to place a Mushroom tile. When you do this:

- The Mushroom tile must be placed orthogonally adjacent to at least 1 other Mushroom in the Forest (never diagonally).
- Do not pay the cost shown on the Mushroom. That is the cost to Activate the Mushroom on later turns.
- Remember to draw your hand back to 3 Mushrooms at the end of your turn.
- When placing your Seedling and/or Root as part of your Reproduce or Partner action, you may place them on the Mushroom you placed this turn, but you are not required to.
- You may place only 1 Mushroom per turn when using the Reproduce or Partner action. (Note: there are Mushrooms with an ongoing abilities to allow you to place an extra Mushroom.)



Reproduce Example: On their turn, the Green player wants to Reproduce, first placing a Mushroom tile, Peppery Bolete, from their hand next to the Common Deceiver.



Cost: They pay **C P P** to the supply.

Optional Action: They pay 1 **N** to the supply and place Peppery Bolete from their hand to the lower right corner of the Forest.



Action: They place a Seedling on an unclaimed corner, and the Root on Peppery Bolete.



Hand size: At the end of their turn they draw 1 Mushroom from the supply so they have 3 in hand.

Action: Partner

Older trees can have dozens of different fungal species attached to their roots, and each fungus can be attached to many different trees. They form a vast underground network.

Each Seedling comes with just one Root. The Partner action allows you to add Roots to Seedlings and Trees. This gives you access to new Mushroom abilities and their potential 🍄 points.



Cost:

- Pay 1 C and 2 K to the supply.

Optional Action: Place a Mushroom (p. 11).

- You may choose to pay any 1 🍄 to the supply to place 1 Mushroom tile from your hand into the Forest.

Action: 2 Roots

- Place 2 Roots onto Mushrooms.
- Each Root you place **must** be attached to one of your Seedlings or Trees (🌱).
- These Roots may be attached to the same 🌱, but they do not have to be.
- You cannot place a Root on another player's 🌱.
- You cannot place a Root on a corner without a Mushroom.
- You can place no more than 18 Roots in the Forest. Most games end long before this.

Action: Photosynthesize

Animals and fungi are all dependent on a food chain that starts with plants photosynthesizing carbon dioxide into carbohydrates - the process of converting light energy into chemical energy. Photosynthesizing is the only way to gain C in Undergrove.

You will use lots of C by activating Mushrooms and making Seedlings and Roots. Taking the Photosynthesize action will replenish your C, ready all of your used Activation tokens and discard any unwanted Mushroom tiles from your hand (allowing you to draw fresh ones at the end of your turn).



Cost: No cost.

Action: Gain 2 C.

- Take 2 C from the supply and add them to your Player board.

Optional Action: + 1 additional C per paid N.

- You may pay any number of N from your Player board to the supply to gain that many additional C.

Action: 🔄

- Flip all of your used (🍄) Activation tokens to their ready side (🌱).

Optional Action: Discard Mushroom tiles

- You may discard any number of Mushroom tiles from your hand. At the end of your turn, draw Mushroom tiles from the supply until you have 3 in hand.

Goal Cards

Goal cards offer another important source of points. All players may score points for all 3 goal cards. The individual Goal cards and how they score are all described on p. 16.



Goal Tracks: All goal cards have a goal track. Each player starts with a Goal Track disc on each goal at the beginning of the game.

Some goals must be tracked during the game, because they are counting how many times you do a certain thing that isn't otherwise recorded (such as making 6 in one turn). Others count how many of something (such as Trees) you have at game end. A game-end goal can be checked at any time during the game and marked on its Goal Track.



Some goals may go above 10. In this case, each player has an extra Goal Track disc that they can place on the 10 and then continue counting 11 and beyond with the other disc:



Score Tables: Score tables will show you how many points you score based on your progress on the Goal Track. There are 3 different types of Score tables:

Counter Tables: Award based on where your Goal Track disc is on the track:

1	2	3+

At the end of the game, each player with their disc on the:

- 1 will earn 3 .
- 2 will earn 5 .
- 3 or more will earn 9 .

Competitive Tables: Award based on how you finished compared to other players on the Goal Track:

4th	3rd	2nd	Most

In the case of a tie, add the for the tied places together and divide them by the number of players, rounding down.

- **Example 1:** If 2 players tied for 2nd and 3rd, they'd each score 4 $[(5+3)/2]$.
- **Example 2:** If 3 players tied for 1st, 2nd, and 3rd, they'd each score 5 $[(9+5+3)/3]$, rounded down].

Multiplier Tables: Some Score tables just have a multiplier. You will score based on variables like your progress on the card's Goal Track:

	your number on the goal track
--	-------------------------------

Example: If your Goal Track disc is at 6 on the card's Goal Track, you would score 12 .

Game End

Game end trigger: Turns continue until one player triggers the end of the game by reaching the end of the Carbon Track (see p. 9). At that point:

- Finish the round: Continue playing until all players have had the same number of turns.
- Then each player gets one more turn.

Scoring and winning: All points are counted at the end of the game. The player with the most points wins. In the event of a tie, the player with the most Trees wins. If there is still a tie, the player with the most 🍄 on their Seedlings is the winner. Score points as follows:

Goal cards: Score as described on each card (p. 16).

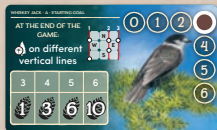
Example: Brown's score for 3 Goal cards:



Brown made 6 🍄 three times in the game for 9 🌿.



Brown had 2 Trees for 2 🌳.



Brown had 6 🌳 in 3 different vertical lines for 1 🌳.

	Brown	Tan	Green	Gray
Goal 1	9			
Goal 2	2			
Goal 3	1			
Total Goals	12			

Brown scored a total of 12 🌿 for the 3 Goal cards.

Seedlings & Trees 🌳: There is space to write the score for each Seedling and Tree on its own line.

- Seedlings with 1 🍄 score 1 Root.
- Seedlings with 2 🍄 score 2 Roots.
- Trees score **all** of their Roots.
- In the **rare** occurrence that all 4 Trees are used, Seedlings with 3 or 4 🍄 score 1 Root per 🍄.


The score of a Root is the 🌿 value shown on the bottom of the Mushroom tile that it is on.




When a Seedling has more Roots than 🍄 on it, the player chooses which Roots to score.



Example: Brown's score for their Seedlings & Trees:





Example scores for Seedlings & Trees:



- 3 Seedling with no 🍄
- 1 Tree
- 2 Seedling with 2 🍄
- 4 Seedling with 2 🍄
- 5 Seedling with 2 🍄
- 6 Seedling with 2 🍄



1. **Tree** - scores all 4 Roots on 4 Mushrooms for 10  total.

2. **Tree** - scores all 3 Roots on 3 Mushrooms for 12  total, but misses out on scoring Surprise Webcap where it doesn't have a Root. (*Mouse Trich's score is based in part on the number of adjacent Gill Mushrooms. It has 3 adjacent Gill Mushrooms, so it scores 2  + 3 .*)






3. **Seedling** - has 2 Roots, but no . It will not score any .



4. **Seedling** - has 3 Roots but only 2 , so Brown chooses to score the Roots on Fly Agaric and Peppery Bolete for 6  total (*Peppery Bolete has 3  on it, so it would score 3 .*)

5. **Seedling** - has 3 Roots but only 2 , so Brown chooses to score the Roots on Common Deceiver and Mouse Trich for 8  total.

6. **Seedling** - has 1 Root and 2 , so it scores only Mouse Trich for 5 . It doesn't score Vermilion Waxcap because it doesn't have a Root there.


		Brown	Tan	Green	Gray
1		10			
2		12			
3		0			
4		6			
5		8			
6		5			
	Total 	41			









Bonus tiles & resources: Write down the score from any  collected on Bonus tiles. You will also gain 1 point for every 2 unused resources ( ,  ,  , or ) left on your Player board at the end of the game.


If you claimed the  token from the end of the Carbon Track, count those points here. 

Example: Let's finish Brown's scoring by writing down their points from Bonus tiles and leftover resources:










- 2 Bonus tiles with 3  for **3 points**.
- 7 resources for **3 points**.


	Brown	Tan	Green	Gray
Goal 1	9			
Goal 2	2			
Goal 3	1			
Total Goals	12			
	10			
	12			
	0			
	6			
	8			
	5			
Total 	41			
Bonus Tiles	3			
	3			
TOTAL	59			

Finally, add the scores for Total Goals, Total , Bonus tiles, and resources. Brown scored a total of 59 for this game.



Goal Cards: Glossary



Silver-haired Bat - A: Track how many times you've made 6 or more  in a turn. To make that many , you'll generally have to pay 4 or more  to the supply when you take the Photosynthesize action. You can also count  earned that turn from bonus tiles or ongoing Mushroom abilities.

Silver-haired Bat - B: Each time you Photosynthesize and pay  to the supply to gain additional , move your disc up the Goal Track 1 space for each  you paid.

Whiskey Jack - A: This goal encourages you to spread out your Seedlings & Trees () on vertical lines from West to East (N, S, E, and W are printed on the starting Mushrooms). You don't want your pieces to be above or below each other on the same vertical line; you want to be on many different lines.




Example: The Green player has 6  in 5 different vertical lines, so they score 6 .

Whiskey Jack - B: Count how many unique Mushrooms your  are touching. Each Mushroom counts only once, no matter how many of your  are touching it.





You do not have to have a Root on a Mushroom for it to count.



Example: The Green player has 6  touching 7 unique Mushrooms.

Red Vole - A: Simply count how many Trees you've grown.

Red Vole - B: Count how many Seedlings & Trees you have with 2 or more Roots.



Douglas-fir Spittlebug - A: This goal tracks how many times you place 2 Roots on the same type of Mushroom in a single turn. The Mushroom's type is indicated by the symbol to the left of its name (///). The 2 Roots may be on the same Mushroom or 2 different Mushrooms of the same type.

Douglas-fir Spittlebug - B: Count how many Roots you've placed.





Flying Squirrel - A and B: These goals track how many Roots you have on a Mushroom with an EVEN or ODD point value.

A player may count a Mushroom with multiple Roots more than once; **the count is by Root.**

Some Mushrooms have variable points, and their point value will change throughout the game. Only their value at the end of the game will count for these goals.

Red Crossbill - A and B: These goals track how many Roots you have on Mushrooms with a color, animal or person in their name. Mushrooms are marked with  for names with a color, and  for names with a person or animal if there is ever any question.

A player may count a Mushroom with multiple Roots more than once; **the count is by Root.**

Banana Slug - A and B: These goals award points for each Sapling or Tree touching a specific number of Mushroom types (///). The 4 types of Mushroom are also shown on page 6.

You do not have to have a Root on the Mushroom for it to count.

Douglas Squirrel - A and B: These goals award points for each Sapling or Tree touching Mushrooms with specific abilities.

Mushrooms that Ready an Activation token include at least one of these symbols: .

You do not have to have a Root on the Mushroom for it to count.

Whispering Woods: Goal Cards



This expansion can be found at: alderacstore.com

Douglas-fir Moth - A: Each Root can count towards only 1 set.

Note: Some Mushrooms have variable points, and their point value will change throughout the game. Only their value at the end of the game will count for this goal.

Douglas-fir Moth - B: This goal tracks how many Seedlings & Trees you have on these 12 corners (red dots), one ring out from Earthlover (the center Mushroom):



Sooty Grouse - A: This goal tracks how many times you move a  two or more spaces as part of an Absorb action or a Mushroom activation. If you move a second  2 or more spaces in the same turn, you will move your disc up the Goal track an additional space.




Sooty Grouse - B: This goal tracks the number of times that you ready all 4 Activation tokens in a turn by any method — the Photosynthesize action, activating Mushrooms, or by using a Bonus tile.

Only used tokens can be readied, so you must have 4 used Activation tokens and ready them all in a single turn to count.

Solo Rules

In Undergrove Solo, you will play against 2 other trees trying to establish their Seedlings in the Forest. They will share a single AI deck that controls their actions.

Solo Setup

- **Main setup:** Referring to the setup instructions on p. 2-3, set up a 3-player game between you (Green) and the AI (Brown and Tan), with the following exceptions:
 - **Steps 6-9:** The AI will play as Brown and Tan, which use only Seedlings. They will not use Roots, Trees, Activation Tokens, or a Player board. They do not get starting resources or Mushroom tiles.
 - **Step 12:** Set this up as normal. The AI players do use their Brown and Tan Carbon Track discs.
 - **Steps 13-14:** Randomly choose 3 Goal cards. The AI will not compete on these goals. If you draw any goals that compare players to each other (with a score table that says 1st/2nd/etc.), replace them with other goals.
 - **Starting Position:** You claim a position as normal. The AI does not claim starting positions. Leave the unclaimed corners of the Earthlover open—do not block them with the unused player color.
- **Additional solo setup:**
 - **AI Mat:** Use the provided mat to organize the AI materials.
 - **AI Decks:** Shuffle the AI cards in 2 separate decks (A & B). Stack them in one facedown pile on the AI mat, with deck B on the bottom and deck A on the top.
 - **AI focus elements:** Pick up 1 of each element (, , and ) and randomly select one. Place it on the AI mat as Brown's focus element. Repeat for Tan, again randomly selecting 1 of the 3 elements. (Both AI players might end up with the same focus element.)

Solo Gameplay

The AI is the first player, and then will alternate its turns with your turns.


On the AI's turn, it draws the top card from its deck and executes each action on it (*explained in the next section*).


On your turn, play as normal.

- If you Activate a Mushroom that gives other players resources, give both Brown and Tan resources as if they were players, adding them to their resource areas on the AI mat.
- If an AI color would ever gain a cube of its choice, it always chooses its focus element.
- If you are the first to take a Bonus tile from a space on the Carbon Track, shuffle the remaining tiles before returning them to the track face down.

Either you or one of the AI colors may trigger the **game end** by reaching the end of the Carbon Track. Follow the game end rules as if the AI were the first player:

- **If you trigger the end**, the AI takes one more turn, then you get one more turn. If the AI reaches the end of the track after the game end has already been triggered, it will take, in order:



1st - 1  and 2 of their focus element.



2nd - Claiming the  token



3rd - 3 .

- **If the AI triggers the end**, they always take their first choice spot shown above. You get one more turn in that round, then you and the AI both get one additional turn.

AI Cards

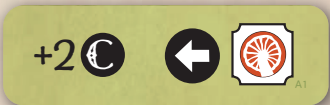
Each AI card has several actions on it. Perform each one in order from top to bottom.






Each action usually has two parts. The first part tells you **what** action the AI is going to take, and the second part tells you **where** that action will take place in the Forest. (An explanation of each AI action starts on the next page.)







This action is telling you to place a Brown Seedling onto the top-most  Mushroom in the Forest.



This action is telling you to place 2  from the supply onto the left-most  Mushroom in the Forest.


Unable to fulfill action: Whenever the AI cannot fulfill one or more of the actions on its card, you take a , , or  of your choice. You gain only one resource on the AI's turn, no matter how many actions it could not carry out.

Location

The arrows, followed by a Mushroom type icon (///), represent a location in the Forest:

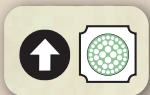





Example: The Top-most  Mushroom in the Forest is the Common Deceiver.



Location Ties: When 2 or more locations are tied, break ties in reading order (left to right / top to bottom). For example, if 2 Mushrooms are both Top-most, then the Mushroom on the left wins the tie. Or if two Mushrooms are both Left-most, then the Mushroom on top wins the tie.



Example: There are 2 top-most  Mushrooms. The tie is broken left to right, so the action is taken on Painted Suillus.



Location cannot be used: If the first Mushroom picked by the Location info cannot be used, find the next available Mushroom of the same type as if that first Mushroom did not exist. If there is no usable location, the AI skips the action. See **Unable to fulfill action** on p. 18.

AI Actions




Place a Mushroom tile: The AI places the top Mushroom tile from the deck if there is a space available of the type specified.




The location iconography will have additional information showing which edge of the Mushroom to place the new Mushroom tile on:



This action is telling you to place a Mushroom tile on the Bottom-most  type Mushroom, along its bottom edge.

If the first Mushroom location indicated does not have that edge available, move along to the next Mushroom of that type to see if it has the indicated edge available. If its edge is not open, continue on in reading order to see if any of the Mushrooms of the indicated type have that edge available.



Example: The Peppery Bolete is the Top-most  Mushroom, but its top edge is blocked. The new Mushroom is placed on the top edge of the Suede Bolete instead.

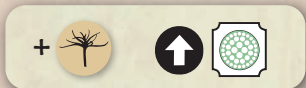


If no Mushroom of the type you're looking for has the correct edge available, the AI does not place a Mushroom. See **Unable to fulfill action** on p. 18.



Place a Seedling: The AI places a Seedling of the indicated color on a Mushroom if there is a space available of the type specified.

Find the first indicated Mushroom that has a corner space available. On that Mushroom, find the corner with the most adjacent Mushrooms. Place a Seedling of the color shown on the AI card on that corner. If two corners are tied, choose by reading order: left to right, then top to bottom.





Example: The Peppery Bolete is the Top-most Mushroom, but its corners are full. The new Tan Seedling will go on the Suede Bolete instead, taking the corner it shares with Scaly Vase.

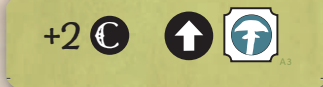




If there is no matching Mushroom with a corner available, the AI does not place a Seedling. See **Unable to fulfill action** on page 18.

+1

Add Carbon: The AI puts a  on a Mushroom in the Forest from the **supply** (never from the AI mat).


Use the location info to find the **first** Mushroom of the indicated type. Add the indicated number of  to that Mushroom.







This action will add 2  to the Top-most  type Mushroom.





Take 1





Take Carbon: The indicated AI color takes  from a Mushroom and adds it to its resource area on the AI mat. It then moves up the Carbon Track 1 step.


Use the location info to find the **first** Mushroom of the indicated type that **has  on it**. The AI takes the number of  shown on the AI card and adds the  to the AI mat. This is an important source of points for the AI — do not return the  to the supply!








In this action, the Brown AI player (color is indicated in the circle with the up arrow) takes all the  from the top-most  Mushroom that has any  on it and adds the  to its resource area on the AI mat. The Brown player moves up the Carbon Track.

If there are no matching Mushrooms with  on them, the AI does not gain any. See **Unable to fulfill action** on p. 18.

However, the indicated AI color still moves up the Carbon Track even if there was no  to take.

As the AI players move up the Carbon Track, they take the rewards shown on the spaces except for free Roots (you gain free Roots from the Carbon Track as normal). Add the rewards to the resources area belonging to the AI player that took the .

When the AI gains a Bonus tile, it takes the top tile in that stack. , , , , and  all count at the end of the game. The bonus tiles that Ready Activation tokens have no effect.

When the AI gains a Bonus tile, you may choose to reveal it to see what benefit the AI gained, or you may choose to leave it hidden and discover its benefit only at the end of the game.

Solo Scoring

You score as normal, as described on pages 14-15.

The AI scores by player color, getting one score for Brown and one score for Tan, as follows:

AI Scoring:

- **Focus element:** Each AI player gains 1 point for each resource they have gathered that matches their focus element. Record this in the goals section of the scorepad.
- **Seedlings:** By player color, count each of the AI's Seedlings. Score each AI Seedling as you would normally score a Tree with 4 Roots.
- **Difficulty Mode:** Pick a difficulty level by crossing out up to two of the AI Seedling scores:
 - **Easy Mode:** Each AI color keeps its 4 highest scoring Seedlings. Cross out the rest.
 - **Medium Mode:** Each AI color keeps its 5 highest scoring Seedlings. Cross out the lowest one.
 - **Hard Mode:** Both AI colors score all of their Seedlings.
- **Bonus tiles, Carbon Track, and resources:** The AI colors score like a human player. Count up the Bonus tile points and leftover resources in each resource area of the AI mat. Note that this is in addition to the focus element points above (i.e. each AI color scores a total of 1.5 points per focus element it took). Add the 2 points from the Carbon Track if one of the AI players claimed that token.

You win if you have a higher score than both of the AI colors.





Added Difficulty


The AI decks intentionally have 3 **The AI takes no actions this turn** cards in them. You may choose to remove 1 or more of them from the AI decks. The more you remove, the harder the game becomes.

Strategy Tips


Good for 1-4 players


Placing Roots: If you have Roots on too many Mushrooms of one type, you won't be able to use them all – your Activation token will be exhausted on the first one used. Diversify!

Absorbing carbon: Try to make a good match between your Roots and your  absorption by the end of the game – you don't want a lot of Roots on Seedlings that don't have  or  on Seedlings that don't have Roots. If you have to pick and choose, Absorb  where you have the most valuable Roots.

Watch other players: Be aware of where other players are with their resources and activation tokens. Although the timing will not always work out, putting  that you might want to absorb on a Mushroom is better done when other players with nearby access to that tile have used their activation tokens or have no resources to pay the cost of absorbing.

High point Mushrooms: When placing a Mushroom that has high point value, you may want to consider whether you can get an additional Seedling on it. Consider where other players are in terms of the resources they need to drop Seedlings on your Mushrooms.

Bonus tiles: Your bonus tiles can often have good surprise value. If another player has placed  on a Mushroom thinking it's out of your reach, flipping over one or two bonus tokens that enable you to swoop in and grab it in can be profitable.

Carbon Track: The top position on the Carbon Track is important not just because it means you have transferred more  than other players, but also because it gives you control over the bonus tokens and the end of game trigger.

Designer Notes

After working together on Mariposas, we knew we wanted to work together again. When Elizabeth mentioned that she'd been wanting to do a game about mushrooms – and specifically the fact that they trade resources with trees underground – it felt worth pursuing.

Mycorrhizal symbiosis is truly one of the wonders of the natural world. Plus, as a trading system, it automatically suggests a mechanic for a board game. But beyond all of that, it's about connections. In a world that feels increasingly fragmented, the fact that there are unseen partnerships under our feet is a comfort, a message that maybe everything really is more connected than it seems.

From both of us: It has been an absolute joy to work with the whole crew at AEG. So much effort goes into making a game actually come to life, and you all do it with care and enthusiasm both for the product and for all the people behind it.

Thanks to the many, many playtesters on the next page, who helped us run through hundreds of games of Undergrove before it was done. We literally couldn't have made this game without you.

And thanks to the scientists who have done the difficult work of bringing these hidden systems to light, and those who continue to do so. Particular thanks to Monika Gorzelak, who spent time with us early in our design process as we were trying to decide on the underlying structure of this game.

From Mark: I'd like to thank everyone that has worked on this game. It has been a joy to work with Elizabeth, and many thanks to John Zinser for suggesting it. And of course my fantastic Vancouver Island people - and especially my wife Liz, together with Chris, Damon, Tim, Mike and Kyle for their support over the many years we have play-tested.

Finally I'd like to remember my Highlander Games Dundee crew: Gary C, Silas, Clark, GT, Craig, Specs, Gary H, Paul, Andy, Joules, Dougie, and Graeme. It is true to say they

rekindled my love of board games, and for the first few years between the end of my time as a ranger and the start of my new career, they were a fantastic support.

From Elizabeth: Thanks to the many designers in the Washington, DC area who create such a community ethos of wanting to see everybody succeed. And especially to Matthew, Dominic and Ben, my weekly kitchen-table crew who keep me moving forward.

Thanks to Matt, my partner and hiking buddy, who got me hooked on fungi in the first place two decades ago. He picks up an awful lot of slack when games take over my entire schedule – and brings me mushrooms when I don't get to go on the hunt myself.

A Note on Vocabulary:

Technically, a mushroom is only the aboveground, spore-producing part of a much larger fungal organism. By this definition, trees don't care about mushrooms at all – they care about the underground part of the fungus that is there year-round, exploring for resources and trading with them. However, we humans do love mushrooms ... so we've taken the liberty of focusing the tiles on the mushrooms that each fungus produces, even if it's for just a few weeks out of the year. We trust that the rest of the game will remind you that there is much more to these fungi than what you see above the surface.

Resources

- To find a local mushroom club in North America: NAMyco.org/clubs
- To learn more about the importance of mycorrhizal networks: www.spun.earth
- To see some of the work on Douglas-fir ecosystems that helped to inspire this game: MotherTreeProject.org

Credits

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Graphic Design: Adelheid Zimmerman, Brigette Indelicato, Kirk W Buckendorf

Producer: Adelheid Zimmerman

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Jerome King, Joe Dierkes, Joe Livingston, John D Clair, John Heath, John Ilko, John Klinovsky, John Weber, John Zinser, Johnathan Franklin, Jonathan Heeter, Jonghyun Lee, Joseph Frederick, Josh Bowman, Julie Ahern, Julien Milcent, Julio Nazarro, Justin Aram, Karan Tolani, KalMarie Rawald, Keegan Kresge, Keith Ferguson, Kelber Tozini, Kelly Salanski, Kenneth Wilson, Ketan Deshpande, Kristine Anderson, Kyle Huibers, Kyra Kevin, Lacy Dove, Lauren Johnson, Lawrence Graham, Lindsey Baldwin, Liz Kosharek, Liz Loevner, Liz Wootton, Luke Jessup, Luke Peterschmidt, Luke Pickles, M Yeager, Mandy McCool, Mark Starr, Matt Cohen, Matthew Bagdan, Matthew Hocker, Matthew O'Malley, Matthew Rodela, Matt Leacock, Matt Rine, Matthew Kambic, Matthew Ransom, Max Helmberger, Megan Caine, Mehrab Modi, Melanie Lardiero, Merlin Stardust, Michael Pacella, Michael Wilson, Michelle Zentis, Mike Hinson, Mike McDonald, Miranda Ehrlich, MJ Burk, Nathan Schwalm, Nicolas Bongiu, Paul Oryem, Paul Owen, Pedro Ometto, Peter True, Phil Walker-Harding, Rachael Kauss, Rachel Frankel, Rachel Patrick, Rachel Webb, Ralph Patrick, Rebecca Bruner, Ricky Hernandez, Rik Van Horn, Robert Fisk, Ryan Dancey, Sarah Fishman, Sarah Joshua Katinsky, Scott Ward Abernathy, Sean Humby, Sean O'Brien, Shane McDaniel, Shannon Earle, Shannon Nix, Shelly Bachstein, Stacia Humby, Stefan Salanski, Stephanie Newman, Talia Rosen, TAM, Terry Fung Ching, Theodore Coyer, Tiffany Tung, Tim Gear, Tim Herring, Tim Lampasona, TC Petty, Thomas Schumann, TJ Spalty, Tom Lehman, Tony Vitez, Wellington Lee, Will Foy, Will Lippincott, Yarin Yanay, Zane Messina

Convention Mushroom Team: Teela Dancey, Justin McQuaig, Adelheid Zimmerman, Ryan & Delaina Dancey



Mushroom Iconography

Remember that you must have a Root on a Mushroom to Activate it!

Earthlover

More detail on p. 7

: You may trade up to 2 resource cubes for the cubes of your choice from the supply.

Costs

Left side of the ability box

Flip your matching token to used.

Place 1 on the Mushroom.

Pay 1 , , or to supply.

Resources

Gain the resources shown

Nitrogen. Gain 1 , , or

Phosphorus. All OTHER

Potassium. players gain the resource shown.

Ready

Flip your token to its ready side



Take Another Action

Take any of the 5 actions from your player board, paying all costs.

Absorb

Follow the rules for Absorb action

- must be Absorbed through a Root.
- You may pay extra or to move to that Root.
- Move up 1 space on the Carbon Track.

If you Absorb 2 :

- They may go to different Seedlings.
- You still move up just 1 space on the Carbon Track (not 2).

Absorb “ from HERE”: The must start on this Mushroom. (This may include you paid to Activate the Mushroom.) You may pay to move it to a different Mushroom and Absorb it there.

Absorb “ANY ”: Each may start on any Mushroom. If Absorbing 2 , they may start on 2 different Mushrooms. Moving costs still apply.

Ongoing

These powers boost one of your 5 actions for the rest of the game, starting on the turn after you place a Root on them.

Having a second Root does not double the power.

+1 On the action noted (**Reproduce or Partner**), place 1 additional Root. On Reproduce, the Root must be attached to the Seedling you placed.

+1 The Photosynthesize action now gives you 3 instead of 2 .

2nd On the action noted (**Reproduce or Partner**), if you pay for the option to place 1 Mushroom tile, you may place a 2nd Mushroom tile for free.

Copy

Select any Mushroom of the matching type and carry out its action as if it were printed on the copycat Mushroom. This includes:

- Pay the cost of the copied Mushroom **on the copycat**.
- Pay any resource cost to the supply.
- Do not flip another activation token.
- If copying an “Absorb from HERE” action, Absorb from the copycat.

Variable Scoring



At game end, score points only for spaces with a cube on them. Spaces must be filled from left to right.

Yellow Veiled Amanita: Once full, the extra resource remains in the supply.



2 points, plus 1 point for each adjacent Mushroom of the indicated type. Diagonals do not count.



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