

FIRST® LEGO® League Challenge BIOGLOW™ Building Instructions

This is booklet #6 and contains instructions for two missions: Mission 6: Leafcutter Frenzy & Mission 7: Humongous Fungus

Mission 7 begins at step 70.1.

This build is 237 pieces, and 90 building steps.

Welcome to text-based instructions from Bricks for the Blind. Before you start building, here are some terms we'll be using:

- In Front of/Front: towards you.
- Behind/Back: away from you.
- Up: towards the ceiling.
- Down: towards the floor.
- Stud: the bump on a LEGO brick. Example: A 2x1 brick has two studs on it.
- Vertically: going from front to behind.
- Horizontally: going from left to right.
- Upright: pointing up towards the ceiling.
- That one/ppp: previously placed piece.
- Plate: piece with studs.
- Tile: smooth piece without studs (unless otherwise specified)
- Symmetrically: a mirror image. Example: If you place a 2x1 brick with technic connector on the front wall at the right, connector to the front, and then place another such piece symmetrically on the back wall, at the right, the technic connector of the second piece should point to the back, since it will be placed symmetrically.
- Centered-vertically: even amount of space in front of and behind the piece
- Centered-horizontally: even amount of space left and right of the piece.
- Row: studs lined up horizontally (left to right/side to side).
- Column: studs lined up upright or vertically (top to bottom/back to front).
- Standing upright: the piece is perpendicular to the ground, like a wall.
- Lying flat: the piece is parallel to the ground, like a piece of toast which fell off the table.
- Anti-stud: the portion of a piece which accepts studs, like the bottom of a plate.
- Jumper plate: a 1x2 plate with a single stud on top, or a 1x3 plate with only two studs on top.

For builders with low vision, or a sighted building partner who may want to follow along with the printed visual instructions that come with each set. As low vision users may benefit from viewing the instructions on a personal device where they can zoom in on content and use assistive technologies to enhance the visuals.

A note on LEGO Technic™ part names. These parts are somewhat different from regular LEGO bricks. I'll include some definitions in case the builder or helper is not familiar with LEGO Technic™.

Axles - An axle is a connector which has an X shaped cross-section. Because their cross section is not round, anything connected to an axle using an axle-hole will rotate with that axle. Axles are longer than they are wide, and the length of an axle corresponds with how many bricks long it is. Aka a 3L axle is three bricks long. Axles come in a variety of lengths, with a 2L axle being the shortest available. They may be combined with pins, or have circular stops on them. A stop prevents the axle from sliding through an axle-hole at a specific point on the axle.

Pins - A pin is a connector which has a circular cross section and a flanged notch out of one or both ends. This flanged notch allows them to click into bricks with a pin-hole. Pins come with and without friction ridges, which are small bumps on the pin which prevent them from rotating freely. For standard pins, black is a high friction pin, and gray is a low friction pin. A standard length pin is two brick lengths long, with a stop in the middle. This prevents a brick from being pushed from one side of the pin to the other. A 1L pin is one brick long and still retains the stop, however it also includes a hollow stud at the other end. A 3L pin is three bricks long, and only contains a stop at one side, allowing two bricks to be pushed onto the other side of the pin. Pins may also have one side which is an axle.

Liftarms - A liftarm is a basic structural element, similar to a brick or a plate, but usually without any studs. It is a beam with rounded ends and with holes in it, with the same spacing as the studs on a LEGO brick. liftarms come in a variety of lengths, including a 1x1 liftarm which looks like a cylinder. Thick liftarms are as wide as a LEGO brick, and thin liftarms are half as wide as a LEGO brick, but not the same thickness as a LEGO plate! The holes in a liftarm arm may accept axles or pins. They also come in a variety of shapes, including tees, ellis and triangles.

Gears - A gear is a functional element. They are typically discs with teeth on the outside, there are also worm gears which look like a spiraling cylinder! Gears connected by axles transmit or even transform rotational motion!

Axle and Pin Connectors - These elements are typically smaller than liftarms, and are used to connect some combination of pins or axles. They might have pins or axles, as well as axle or pin-holes. They have a lot of different angle combinations! The simplest just connects two axles or pins together in a straight line.

Bushes/Bushings - LEGO Technic™ uses bushes largely as spacers, but they also can reduce friction between rotating parts, or can form useful elements such as handles. Bushes are typically light gray, generally cylindrical, and have an axle-hole running through the middle. They have a flange at the front and back to make them easier to pull on and off.

Sorting Instructions:

This LEGO set comes in the bags labeled 8-10 and some large pieces from bag 0. Sort the pieces into groups as described below. Note that where there are multiple colors of the same brick in a step, the colors will be split across two groups to make telling the difference easier for the builder! LEGO includes a few spare parts in case you lose something. Set these into their own group away from the rest, in case you need them later.

Mission 6: Leafcutter Frenzy & Mission 7: Humongous Fungus

Group A contains all of the black 2L pins from this bag. These pins have friction ridges.

Group B contains all of the blue 3L pins from this bag. These pins have friction ridges.

Group C contains all of the blue 2L axle/pin combos from this bag. These pins have friction ridges.

Bag 8 (6 groups of bricks)

Main Build: Base

Group 1 contains the pieces for steps 1-9. Include a white 6x12 plate from bag 0.

Group 2 contains the pieces for steps 10-21. Include a white 2x12 plate from bag 0.

Group 3 contains the pieces for steps 22-25.

Group 4 contains the pieces for steps 26-35.

Group 5 contains the pieces for steps 36-39.

Sub-build: Leaf-Cutter Ant

Group 6 contains the pieces for steps 40-48.

Bag 9 (6 groups of bricks)

Group 7 contains the pieces for steps 49-58.

Group 8 contains the pieces for steps 59-67.

Group 9 contains the white pieces for step 68, as well as two red 1L pins.

Group 10 contains the orange and yellow pieces for step 68, as well as two red 1L pins.

Group 11 contains the green pieces for step 69, as well as two red 1L pins.

Group 12 contains the orange and dark orange pieces for step 69, as well as two red 1L pins.

Bag 10 (4 groups of bricks)

Mission 7: Humongous Fungus

Group 13 contains the pieces for steps 70-72.

Group 14 contains the pieces for steps 73-77.

Group 15 contains the pieces for steps 78-85. Include a white 15L liftarm from bag 0.

Group 16 contains the pieces for steps 86-91. Include a white 21L string with climbing grips and studs on the ends from bag 0.

Building Instructions:

Groups A, B, C and 1. You will use the pins from groups A, B and C throughout the build.

Mission 6: Leafcutter Frenzy

Main Build

1.1. Let's start by building a base. Place a white 6x12 plate, horizontally, in front of you.

1.2. Place a tan 1x2 slope brick, vertically with the slope at the back, on the leftmost column of the previous piece so the back sides are even.

2.1. Place a tan 2x4 slope brick, horizontally with the slope at the back, to the right of the previous piece.

2.2. Place a tan 1x2 slope brick, vertically with the slope at the back, to the right of the previous piece.

2.3. Place a tan 2x4 slope brick, horizontally with the slope at the back, to the right of the previous piece.

2.4. Place a tan 1x2 slope brick, vertically with the slope at the back, to the right of the previous piece. There will be one free column to the right of this piece.

3. Place a green 1x1 slope tile, with the tall side at the front, to the right of the previous piece so the back sides are even.

4. Place a tan 1x8 brick, vertically, in front of the previous piece. The front three studs will overhang.

5.1. Place the right two columns of a tan 3x3 plate on the left two columns of the 6x12 plate so the front sides are even. The leftmost column will overhang.

5.2. Place a tan 1x2 plate, vertically, under the left column of the previous piece so the back sides are even.

6. Find the 1x8 brick that's on the rightmost column of the base. Place the right column of a light gray 2x3 plate, vertically, under the front three overhanging studs of the 1x8 brick.

7.1. Place the rightmost stud of a white 1x4 brick with a slot on one side, horizontally with the slot at the back, on the front left stud of the previous piece. The left three studs will overhang.

7.2. We'll add a rack gear in a little bit, and now we'll add a slot for the rack gear to slide in. Find a light gray A-shaped plate with two rows of four studs. This piece is two 1x4 plates that are connected at an angle. Rotate it so the point of the A is at the right. Place the back 1x4 plate, horizontally, under the previous piece and to the left of a 2x3 plate. The leftmost stud of the back 1x4 plate will extend past the previous piece.

8.1.1. We'll make an assembly to extend the groove. Place a white 2x2 tile with two studs, with the studs at the front, in front of you.

8.1.2. Place a white 1x4 brick with a slot on one side, horizontally with the slot at the back, centered horizontally on the previous piece. The left and right studs will overhang.

8.2. Place the right stud of a white 2x2 tile with two studs, with the studs at the front, under the leftmost stud of the previous piece.

8.3. Place a white 1x4 brick with a slot on one side, horizontally with the slot at the back, to the left of the previous piece. The left three studs will overhang.

8.4. Place a white 2x2 tile with two studs, with the studs at the front, centered horizontally under the previous piece.

8.5. Place the rightmost 1x4 brick with a slot on the assembly we just made to the left of the 1x4 brick with a slot that's already on the base assembly. The rightmost stud should attach to the leftmost stud of the A-shaped plate from step 7.2.

9.1. Place a green 1x5 plate, horizontally, on the leftmost 1x4 brick with a slot so the left sides are even.

9.2. Place a tan 1x8 plate, horizontally, to the right of the previous piece.

9.3. Place a tan 1x12 plate, horizontally, on the back row of the base. This piece will attach to a number of slope bricks.

9.4. Place a tan 1x2 plate, vertically and centered vertically, on the rightmost column of the base. There will be two free studs between this piece and each of the previous two pieces.

Group 2.

10.1.1. Next, we'll make a smaller base to attach to the main base. Set the base aside for now. Place a white 4x4 plate in front of you.

10.1.2. Place a light gray 2x4 plate with a pin sticking up from the middle, vertically and centered vertically, on the previous piece. Place another to the right of the first. The right column of the right piece will overhang.

10.2. Place a white 2x4 plate, vertically, to the left of the left piece from the previous step. The left column will overhang.

10.3. Place a white 1x4 plate, vertically, under the rightmost, overhanging column.

10.4.1. Place a light gray 1x2 brick, vertically and centered vertically on the leftmost column of the small base.

10.4.2. Place a white 1x6 brick, horizontally, on the front row of the base. Repeat symmetrically on the back side.

10.5. Place the main base, horizontally with the A-shaped plate at the front, in front of you. Rotate the small base assembly about 45 degrees clockwise so the left column of four studs is parallel to the angled 1x4 plate of the A-shaped plate. Place the back row of the small base onto the free 1x4 plate. The two pins on the small base should be near the right side.

11.1. Place a green 1x1 plate with a small triangle hanging down from one side, with the triangle on the left, on the back left stud of the main base.

11.2. Skip two studs to the right and place a tan 1x2 plate, horizontally, on the back row. Skip two more studs to the right and place another.

11.3. Place a tan 1x8 plate, vertically, on the rightmost column of the main base.

12.1. Place a green 1x1 round tile on the wall to the left of the front stud of the previous piece.

12.2. Place the back 1x4 plate of a light gray A-shaped plate, with the back 1x4 plate horizontal and the point of the A-shaped plate on the right, to the left of the previous piece. The A-shaped plate should attach the main and small bases.

12.3. Place a green 1x5 plate, horizontally, to the left of the back plate of the previous piece.

12.4. Place a tan 1x2 plate, horizontally, to the left of the previous piece.

Sub-Build: Rack Gear Assembly.

13.1. Now, we'll build the rack gear assembly. Set the base aside for now. Place a white 2x12 plate, horizontally, in front of you.

13.2. Place a white 1x2 plate with a rail on one side, horizontally with the rail at the front, on the front row of the previous piece so the right sides are even. The rail will overhang.

14.1. Place a white 1x8 plate with a rail on one side, horizontally with the rail at the front, to the left of the previous piece. The rail will overhang.

14.2. Place a white 1x2 plate with a rail on one side, horizontally with the rail at the front, to the left of the previous piece. The rail will overhang.

15.1. Place the front row of a red 2x2 slope brick, with the slope at the back, on the back row of the 2x12 plate so the left sides are even. The back row will overhang.

15.2. Place the left two studs of a light gray 1x3 plate, horizontally, under the back overhanging row of the previous piece so the left sides are even.

16. Place a red 2x2 corner tile, with the corner at the front left, to the right of the 2x2 slope brick.

17.1. Place a red 2x2 slope brick, with the slope at the front, in front of the first 2x2 slope brick. The front row will overhang. These two slope bricks make a small platform.

17.2. Place a tan 1x2 plate, horizontally, under the front overhanging row of the previous piece.

18. Next, we'll add the rack gears! Find a white 1x4 rack gear. This piece looks kind of like a 1x4 tile that has a bunch of grooves on it. Place this, horizontally, on the front row of the rack gear assembly so the right sides are even. This will go on plates with rails at the front. Place two more to the left of the first.

19. Keeping the platform made by the slope bricks on the left, flip the rack gear assembly upside down. Place a blue 1x2 plate with rounded ends, upside down and horizontally, on the front row of the assembly so the right sides are even.

20. Place a light gray 2x2 round plate with a rounded bottom, upside down, on the left two columns of the assembly so the front sides are even. Place another behind the first.

Main Build

21. Place the base assembly back in front of you so it's horizontal with the small base at the front near the right. Find the row of three 1x4 bricks with a slot that are on the front wall of the main base. Keeping the platform of 2x2 slopes on the left, flip the rack gear assembly over so it's upright with the gears on top and the rail at the front. Slide the rails on the rack gear into the slot on the front wall of the base. You should be able to push the rack gear assembly all the way to the right before it stops when the 2x2 corner tile hits the 3x3 plate on the base.

Group 3.

22. Flip the base upside down so the small base is at the back right. Find the leftmost column on the main base, not including the rack gear assembly. Place a tan 1x4 tile with two studs, upside down and vertically, on this column so the back sides are even. There should be a 1x2 plate in front of this piece.

23. Flip the base back right side up so the small base is at the front right. Place a white 1x3 curved slope tile, horizontally with the tall side on the left, on the front row of the small base so the left sides are even. Place another on the back row of the small base.

24. Place a tan 1x12 brick, horizontally, on the back row of the base.

25.1.1. Find the 3x3 plate that's behind the rack gear, near the left side of the main base. Place a 2x3 tan brick, horizontally, on the back two rows of this piece.

25.1.2. Place a tan 1x2 brick, horizontally, on the back row of the previous piece so the right sides are even.

25.2.1. Place a green 1x1 slope tile, with the tall side on the right, to the left of the previous piece.

25.2.2. Place a tan 1x2 plate, horizontally, in front of the 1x2 brick from step 25.1.2.

25.3. Place a tan 1x1 brick with a hole, with the hole facing the front and back, on the left stud of the previous piece.

Group 4.

26.1. Next, we'll build a camshaft! Set the base assembly aside for now. Place a black 2L axle connector, with the holes facing left and right, in front of you.

26.2. Push a red 6L axle into the left hole of the previous piece.

26.3. Push a light gray 5L axle into the right hole of the 2L axle connector.

27. Push a yellow thin bushing over the end of each of the previous two pieces. Push them all the way in until they both touch the 2L axle connector.

28.1. Find a black cam. This piece is about 2x3 in size, is flat with no studs or gear teeth and is shaped like a tear drop. It has four axle holes in a line. Rotate this piece so it is upright with the pointed side at the back and push the front hole over the left end of the left axle. Push it all the way to the right until it touches the left thin bushing.

28.2. Push the bottom hole of another cam, with the pointed side at the top, over the right side of the right axle. Push it all the way to the left until it touches the right thin bushing.

29. Push a black thick bushing over the end of each of the two axles. Push them all the way in until they touch the previous two pieces.

30.1. Push the back hole of a black cam, with the pointed side at the front, over the left side of the left axle. Push it all the way to the right until it touches the left thick bushing.

30.2. Push the top hole of a black cam, with the pointed side at the bottom, over the right side of the right axle. Push it all the way to the left until it touches the right thick bushing.

31. Push a yellow thin bushing over the end of each of the two axles. Push them all the way in until they touch the previous two pieces.

32. Push a black 12 tooth gear over the left end of the left axle. Push it all the way to the right until it touches the left thin bushing.

33.1. The next two pieces won't actually be attached yet, so make sure you hold the cam level so they don't fall off! Before we do that, set the base assembly, horizontally with the small base at the front right, in front of you. Slide the hole of a tan 1x1 brick with a hole, with the hole facing left and right, on the left end of the left axle.

33.2. Slide the back hole of a white 1x2 brick with two holes, vertically with the holes facing left and right, onto the right end of the right axle.

34. Place the 1x2 brick on the right side of the cam assembly on the right column of the main base so there are two free studs between it and the 1x12 brick on the back row. There should be three free studs in front of it. The 1x1 brick on the cam assembly should attach to the right of another 1x1 brick with a hole.

35.1. Place the front right stud of a white 2x2 curved slope tile, with the tall side at the front, on the 1x1 brick on the cam assembly.

35.2. Place the back stud of a white 1x2x2 curved slope tile, with the tall side at the back, on the front stud of the 1x2 brick on the cam assembly. Place another symmetrically behind the first.

Group 5.

36. Place a white 1x10 brick, horizontally, on the front row of the main base so the right sides are even.

37.1.1. Now we'll make a gear train! Set the base aside for now. Place a white 1x2 brick with two holes, vertically with the holes facing left and right, in front of you.

37.1.2. Slide a brown 5L axle with a stop on one side, with the stop at the right, from the right into the front hole of the previous piece. Only slide it in until the right side extends about 1L.

37.1.3. Push a tan 20 tooth gear onto the left side of the previous piece. Push it all the way to the right until it touches the 1x2 brick. The right side of the axle should still extend about 1L to the right of the brick. This is the smallest gear in this group.

37.2.1. Push a black thick bushing over the left end of the axle. Push it all the way to the right until it touches the previous piece.

37.2.2. Push a light gray 28 tooth gear onto the left side of the axle. Push it all the way to the right until it touches the previous piece. This is the largest gear in this group.

37.3. Place the main base, horizontally with the small base at the front right, in front of you. Rotate the gear train so the 28 tooth gear is at the back and the 1x2 brick is horizontally at the front. Place the 1x2 brick on the front row of the main base to the left of the 1x10 brick. There should be one free stud to the left of the 1x2 brick. The 5L axle with a stop should extend to the front.

38. Push the 5L axle with a stop on the gear train assembly forwards as far as it will go. It will extend into the hole of the 1x1 brick with a hole that's behind the 28 tooth gear. The teeth on the 20 tooth gear should mesh with the teeth of the rack gear, and the teeth of the 28 tooth gear should mesh with the teeth of the gear on the cam.

39. Place a green 1x1 slope tile, with the tall side on the right, to the left of the 1x2 brick of the gear assembly.

Group 6.

Sub-Build: Leaf-Cutter Ant

40.1. Next, we'll build a leaf-cutter ant! This ant will sit on the platform of the rack gear. Set the base aside for now. Place a black 1x2 plate with a handlebar on one side, vertically with the handlebar on the right, in front of you.

40.2. Place the right stud of a black 1x2 plate with a bar sticking up from one side, horizontally with the bar at the back, on the back stud of the previous piece. The left stud will overhang.

41. Place the back stud of a black 1x2 plate with a handlebar on one side, vertically with the handlebar on the left, under the left overhanging stud of the previous piece. We'll attach the ant's legs to these pieces.

42. Place a black 1x1 round plate with a bar on one side, with the bar at the front, on the front stud of the previous piece. Place another to the right of the first.

43. Place a black 2x2 round plate on the ant.

44.1.1. Next we'll build the ant's abdomen. Place a brown 1x1 round plate with a hollow stud in front of you.

44.1.2. Place a red 2x2 dome bottom, with the wide side on top, on the previous piece.

44.2.1. Place a black 2x2 round plate on the previous piece.

44.2.2. Place a red 2x2 dome top on the previous piece.

44.3. Push the hollow anti-stud at the bottom of the abdomen down onto the upright bar on the back of the ant.

45. Place a brown 1x1 round plate with a hollow stud on the front left stud of the ant. Place another to the right of the first. These are the ant's eyes!

46. Now we'll add some legs! Clip three black 1L bars with a clip on one side, with the clip on the right, onto the handlebar on the left side of the body. The legs should stick straight out from the body. Repeat symmetrically on the right side.

47. Let's give the ant some camouflage! Push the hollow studs of a green 1x2 plate with a curved leaf on one side, horizontally with the leaf on the left and the anti-studs at the back, onto the two bars on the front side of the ant.

48. Now we'll add the ant to the base! Place the base, horizontally with the small base at the front right, in front of you. Find the two 2x2 slope bricks on the left side of the rack gear assembly. Rotate the ant so the leaf is vertically on the right. Place the ant on the platform. You should be able to slide the rack gear assembly left and right, and the cams should spin!

Bag 9.

Group 7.

49.1. Next, we'll build the top of the base. Set the rest of the assembly aside. Place a tan 1x12 plate, horizontally, in front of you.

49.2. Place a tan 1x2 slope brick, horizontally with the slope on the left, on the left two studs of the previous piece.

50. Place a green 1x1 slope tile, with the tall side on the right, on the previous piece.

51. Place the back stud of a tan 1x8x2 arch brick, vertically, to the right of the previous piece.

52.1.1. Place the third stud from the left of a tan 1x12 plate, horizontally, under the front stud of the previous piece.

52.1.2. Place a tan 1x2 slope brick, horizontally with the slope on the left, on the left two studs of the previous piece.

51.2. Place a green 1x1 slope tile, with the tall side on the right, on the previous piece.

53. Place a green 1x1 round tile to the right of the back stud of the 1x8x2 arch brick.

54.1. Place the back stud of a tan 1x8x2 arch brick, vertically, to the right of the previous piece.

54.2. Place a green 1x1 round tile to the right of the back stud of the previous piece.

55.1. Place the back stud of a tan 1x8x2 arch brick, vertically, to the right of the previous piece. Place another to the right of the first.

55.2. Place a green 1x1 round tile to the right of the back stud of the right piece from the previous step.

56.1. Place the back stud of a tan 1x8x2 arch brick, vertically, to the right of the previous piece.

56.2. Place a green 1x1 round tile to the right of the back stud of the previous piece.

57. Place the back stud of a tan 1x8x2 arch brick, vertically, to the right of the previous piece. This piece should be even with the right end of the assembly.

58. Place a tan 2x10 plate, horizontally, on the six arch bricks so there is one free row behind it.

Group 8.

59.1. Place the front stud of a tan 1x2 curved slope tile, vertically with the tall side at the front, on the back left stud of the previous piece. Skip one stud to the right and place another. These two pieces should attach to 1x8x2 arch bricks. Repeat symmetrically on the right side of the 2x10 plate.

59.2. Place the front row of a white 2x2 curved slope tile, with the tall side at the front, centered horizontally on the 2x10 plate. The back row should attach to the pair of 1x8x2 arch bricks.

60.1. Place a tan 2x10 plate, horizontally, on the six arch bricks so there are two free rows in front of it.

60.2. Place the back stud of a white 1x3 curved slope tile, vertically with the tall side at the back, on the front left stud of the previous piece.

61. We're going to work on the back 2x10 plate now. Place the back stud of a tan 1x2 slope brick, vertically with the slope at the back, on the back 2x10 plate and between the left two curved slope tiles. Repeat three more times until the slope of a 1x2 slope brick is between each pair of curved slope tiles.

62. Place a green 1x3 tile, vertically, in front of each of the 1x2 curved slope tiles that's on the back 2x10 plate. Place two more, also vertically, in front of the 2x2 curved slope tile. You'll place six pieces in this step.

63. Repeat the 1x2 slope bricks from step 61 symmetrically on the front 2x10 plate.

64.1. Place a white 2x2 curved slope tile, with the tall side at the back, in front of the pair of 1x3 tiles from step 62.

64.2. Place a white 1x3 curved slope tile, vertically with the tall side at the back, in front of the three 1x3 tiles from step 62 that do not already have a curved slope tile.

65.1. Place a white 1x2 plate with rounded ends, horizontally, in front of the front 2x2 curved slope tile from step 64.1.

65.2. Place a glow in the dark 1x1 round tile on the right stud of the previous piece.

66.1. Place a white 1x1 cone to the left of the previous piece.

66.2. Place a transparent 2x2 dome, centered vertically and horizontally, on the previous piece.

67. Now we'll add this assembly to the top of the base! Place the base, horizontally with the ant on the left, in front of you. Place the top assembly, horizontally, on top of the base. The front and right sides should be even.

Group 9 contains the white pieces from the next step and two red 1L pins with studs on one side.

68.1.1. Next, we'll make some leaves that stick upright. Place a white 7L thick liftarm, horizontally with the holes facing up and down, in front of you.

68.1.2. Push a red 1L pin with a stud on one side, with the hole on top, into each of the right two holes on the previous piece.

68.2. Place a white 1x2 plate with a curved leaf on one side, horizontally with the leaf on the right, on the previous two pieces.

68.3. Rotate the leaf assembly so it's upright with the leaf on top and the studs on the left. Find the two 1x2 slope bricks on the second column from the right on top of the main base. Slide the 7L liftarm at the bottom of the leaf into the hole between these two bricks.

Group 10 contains the orange and yellow pieces from the next step and two red 1L pins with studs on one side.

68.4.1. Let's make another leaf! Place an orange 7L thick liftarm, horizontally with the holes facing up and down, in front of you.

68.4.2. Push a red 1L pin with a stud on one side, with the hole on top, into each of the right two holes on the previous piece.

68.5. Place a yellow 1x2 plate with a curved leaf on one side, horizontally with the leaf on the right, on the previous two pieces.

68.6. Rotate the leaf assembly so it's upright with the leaf on top and the studs on the left. Find the two 1x2 slope bricks that's to the left of the rightmost leaf assembly. Slide the 7L liftarm at the bottom of the leaf into the hole between these two bricks.

Group 11 contains the orange and dark orange pieces from the next step and two red 1L pins with studs on one side.

69.1.1. Next, we'll make a third leaf. Place a dark orange 7L thick liftarm, horizontally with the holes facing up and down, in front of you.

69.1.2. Push a red 1L pin with a stud on one side, with the hole on top, into each of the right two holes on the previous piece.

69.2. Place an orange 1x2 plate with a curved leaf on one side, horizontally with the leaf on the right, on the previous two pieces.

69.3. Rotate the leaf assembly so it's upright with the leaf on top and the studs on the left. Find the two 1x2 slope bricks that's to the left of the second leaf assembly. Slide the 7L liftarm at the bottom of the leaf into the hole between these two bricks.

Group 12 contains the green pieces from the next step and two red 1L pins with studs on one side.

69.4.1. Next, we'll make another leaf. Place a green 7L thick liftarm, horizontally with the holes facing up and down, in front of you.

69.4.2. Push a red 1L pin with a stud on one side, with the hole on top, into each of the right two holes on the previous piece.

69.5. Place a green 1x2 plate with a curved leaf on one side, horizontally with the leaf on the right, on the previous two pieces.

69.6. Rotate the leaf assembly so it's upright with the leaf on top and the studs on the left. Find the two 1x2 slope bricks that's to the left of the third leaf assembly. Slide the 7L liftarm at the bottom of the leaf into the hole between these two bricks.

69.7. Now, if you slide the ant left and right, the leaves should bounce up and down! Don't move the ant too fast, or you might launch a leaf!

Bag 10.

Group 13.

Mission 7: Humongous Fungus

70.1. Next, we'll build a web trap! We'll start by building a base. Set the main base aside for now. Place a red 3L thick liftarm, vertically with the holes facing left and right, in front of you.

70.2. Push a blue 3L pin from group B, with the stop ring on the left, from the left, into the front hole of the previous piece. Push it all the way to the right so it extends 1L to the left and right. Repeat in the back hole of the liftarm.

71. Push the back two holes on the right side of a 3x5 L-shaped liftarm, with the short liftarm upright at the front and the long liftarm laying flat at the back, from the right onto the left side of the previous two pieces. Repeat symmetrically on the right side.

72. Rotate the web base 90 degrees towards you so it stands up on the short legs of the 3x5 liftarms. The long legs will be upright at the back. Push a black 2L pin from group A, from the left, into each of the holes on the short liftarm of the left piece from the previous step. Repeat symmetrically on the right side.

Group 14.

73.1.1. Push the holes on the short leg of a white 3x5 L-shaped liftarm, with the short liftarm laying flat at the back and the long liftarm upright at the front, from the left onto the left two pieces from the previous step.

73.1.2. Push a black 2L pin from group A, from the front, into the bottom hole on the front side of the previous piece. There will only be one free hole above this piece.

73.2.1. Push a light gray 2L pin with a bushing on one side, with the bushing at the back, from the back into the hole above the previous piece. Push it all the way forward so it extends 1L in front of the L-shaped liftarm.

73.2.2. Push a white 3L thick liftarm, upright with the holes facing front and back, from the front onto the previous two pieces.

74.1. Push the pin side of a blue 2L axle/pin combo from group C, with the axle side on the right, from the right into the second hole from the top on the leftmost 3x5 L-shaped liftarm so the axle side extends to the right.

74.2. Push the left hole of a light gray 3L axle connector, horizontally, onto the right side of the previous piece.

74.3. Push the axle side of a blue 2L axle/pin combo from group C, with the axle side on the left, from the right into the right hole of the previous piece so the pin side extends 1L to the right.

75.1.1. There will now be three pins on the right side of the web base. Push the holes on the short leg of a white 3x5 L-shaped liftarm, with the short liftarm laying flat at the back and the long liftarm upright at the front, from the right onto the bottom two pins on the right side of the base. The previous piece will go into the middle hole on the left side of the long, upright liftarm.

75.1.2. Push a black 2L pin from group A, from the front, into the bottom hole on the front side of the previous piece. There will only be one free hole above this piece.

75.2.1. Push a light gray 2L pin with a bushing on one side, with the bushing at the back, from the back into the hole above the previous piece. Push it all the way forward so it extends 1L in front of the L-shaped liftarm.

75.2.2. Push a white 3L thick liftarm, upright with the holes facing front and back, from the front onto the previous two pieces.

76.1.1. Now, we'll make the base taller! Find a light gray 5x7 hollow frame. This looks like two 7L liftarms connected by two 3L liftarms on the ends, forming an open rectangle. Place this, upright and horizontally with the 7L liftarms upright, in front of you.

76.1.2. Push a blue 3L pin from group B, with the stop ring at the bottom, from the top into the left hole on top of the previous piece. It will extend 2L above the hollow frame. Repeat symmetrically on the right side so there's one free hole between these two pieces.

76.2. Push a light gray 5L thick liftarm, horizontally with the holes facing up and down, centered horizontally, on the previous two pieces. Push it down so the pins extend 1L above it.

76.3. Push the pins on top of the hollow frame, from the bottom, into the holes on the bottom of the left and right L-shaped liftarms on the rest of the web base.

77. Place the main base, with the small base horizontally at the right, in front of you. The ant should be at the front left and the two pins on the small base should be near the right side. Keeping the hollow frame at the bottom, rotate the web base 180 degrees so the hollow frame is upright and horizontal and so side with two 3L liftarms is at the back. Push the left and right holes on the bottom of the trap assembly onto the two pins on the small base.

Group 15.

78.1. Next, we'll build the rest of the trap. Set the base assembly aside for now. Place a white 15L thick liftarm, horizontally with the holes facing front and back, in front of you.

78.2. Push a tan 3L pin, with the stop ring at the front, from the front into the leftmost hole of the previous piece. Push it all the way back so it extends 1L to the front and back. This pin does not have friction ridges and will spin freely.

79. Push the rightmost hole of a light gray 5L thick liftarm, horizontally with the holes facing front and back, from the front onto the front side of the previous piece.

80.1. Push the front hole of a blue 3L pin from group B, with the stop ring at the front, from the back into the third hole from the left of the previous piece.

80.2. Push a white 1L liftarm, from the back, onto the back side of the previous piece. Push it all the way forward so the pin extends 1L behind it.

81. Push a light gray 5L thick liftarm, horizontally with the holes facing front and back, from the back onto the two pins on the back of the assembly. The rightmost pin will go on the rightmost hole of the liftarm.

82.1.1. Find a white 7x3 bent liftarm. This is a 7L liftarm connected to a 3L liftarm at a 135 degree angle. The holes at each end are axle holes. Place this piece, horizontally with the 7L liftarm on the right and the 3L liftarm on the left pointing up, in front of you. The holes should be facing the front and back.

82.1.2. Push the axle side of a blue 2L axle/pin combo from group C, with the pin side at the back, from the back, into the leftmost axle hole of the previous piece.

82.1.3. Push a black 2L pin from group A, from the back, into the hole to the right of the previous piece.

82.2. Push the axle side of a tan 2L axle/pin combo, with the pin side at the front, from the front into the rightmost axle hole of the 7x3 bent liftarm.

82.3. Push the previous piece, from the back, into the leftmost hole of the back 5L liftarm on the rest of the trap assembly.

83.1. Push the pin side of a blue 2L axle/pin combo from group C, with the axle side at the front, from the front into the hole to the right of the corner hole of the bent liftarm so the axle extends to the front. There should be four free holes between this piece and the back 5L liftarm.

83.2. Push the back hole of a light gray 3L axle connector, vertically, onto the front side of the previous piece.

83.3. Push the axle side of a blue 2L axle/pin combo from group C, with the axle side at the back, from the front into the front hole of the previous piece so the pin side extends 1L to the front.

84.1. Place a white 7x3 bent liftarm, horizontally with the 7L liftarm on the right and the 3L liftarm on the left pointing up, in front of you. The holes should be facing the front and back.

84.1.2. Push the axle side of a blue 2L axle/pin combo from group C, with the pin side at the front, from the front, into the leftmost axle hole of the previous piece.

84.1.3. Push a black 2L pin from group A, from the front, into the hole to the right of the previous piece.

84.2. Push the axle side of a tan 2L axle/pin combo, with the pin side at the back, from the back into the rightmost axle hole of the 7x3 bent liftarm.

84.3. Push the previous piece, from the front, into the leftmost hole of the front 5L liftarm on the rest of the trap assembly. The pin on the front side of the 3L axle connector from step 83.2 will also connect to the bent liftarm.

85.1.1. Now we'll extend the bent liftarms. Place a white 7L thick liftarm, horizontally with the holes facing front and back, in front of you.

85.1.2. Push a red 1L pin with a stud on one side, with the stud at the front, into the rightmost hole of the previous piece.

85.2.1. Push a black 2L pin from group A, from the front, into the leftmost hole of the 7L liftarm.

85.2.2. Skip one hole to the right and push in another red 1L pin with a stud on one side, with the stud at the front.

85.3.1. Push the bar side of a white 1L bar with a clip on one side, with the clip at the front and the fingers of the clip on the top and bottom, from the front into the hollow stud of the previous piece.

85.3.2. Push a white 1L liftarm onto the front side of the 2L pin that's in the left hole of the 7L liftarm.

85.4. Repeat steps 85.1.1-85.3.2.

85.5. Now we'll add one of these to the two pins on the short leg of the front 7x3 bent liftarm. Push the rightmost two free holes on one 7L liftarm assembly, with the 1L liftarm at the front near the left, onto the two free pins on the front side of the trap assembly. This left side of the 7L liftarm will point up. Repeat symmetrically on the back side with the other 7L liftarm.

Group 16.

86. Next, we'll add some string. Find a white 21L string with climbing grips and studs on the ends. This piece has short bars spaced across its length that a minifigure can grip. Place one stud of this rope onto the bottom right stud on the front 7L lifarm. Place the other stud symmetrically on the back 7L lifarm. Clip the second bar from each end onto the clips on the two 7L lifarms. The middle section of the string should be to the right of the bent lifarms.

87. Now, we'll add the rest of the trap assembly to the base. Place the main base, vertically with the ant at the back, in front of you. The small base will be at the front left. The top of the web trap base is made from four L-shaped lifarms, with a 3L lifarm upright between the middle two and a 3L axle connector between the outer two. Rotate the web trap assembly so the 15L lifarm is at the back left and so the rope is at the bottom. Pass the 15L lifarm, from the front, underneath the 3L lifarm at the 3L axle connector. Pull it from the back, as far back as it will go.

88.1. Next, we'll add a handle. Rotate the combined assembly so the 15L lifarm is horizontal and pointing to the right. The main base will be at the front right. Push a blue 3L pin from group B, with the stop ring at the back, from the back into the rightmost hole of the 15L lifarm. Push it all the way in so it extends 1L to the front and back.

88.2. Push a red 2L pin connector, from the back, onto the back side of the previous piece.

88.3. Push the pin side of a blue 2L axle/pin combo from group C, with the pin at the front, into the back side of the previous piece.

88.4 Push the axle hole of a red ball with an axle hole, from the back, onto the axle side of the previous piece.

89.1. Push the back hole of a red 2L pin connector, from the front, onto the pin on the front side of the 15L lifarm.

89.2. Push the pin side of a blue 2L axle/pin combo from group C, with the pin at the back, into the front side of the previous piece.

89.3 Push the axle hole of a red ball with an axle hole, from the front, onto the axle side of the previous piece.

90.1. Pull the 15L lifarm as far right as it will go, and then push a black 2L pin from group A, from the front, ninth free hole from the handle. There should be eight free holes between this pin and the handle.

90.2. Push a white 1L lifarm, from the front, onto the previous piece.

91. Now, take the left side of the web trap assembly and rotate it up and to the right as far as you can so it overhangs the trap base to the right. If you pull the handle to the right, the trap should rotate quickly to the left!

Congratulations! Now this build is complete!

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