# *FIRST*® LEGO® League Challenge UNEARTHED™ Building Instructions

Build 10: Forge

This build is 225 pieces, and 69 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.

A note on LEGO Technic™ part names. These parts are somewhat different from regular LEGO bricks. Here are 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.

Lift-arms - A lift-arm 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. lift-arms come in a variety of lengths, including a 1x1 lift-arm which looks like a cylinder. Thick lift-arms are as wide as a LEGO brick, and thin lift-arms are half as wide as a LEGO brick, but not the same thickness as a LEGO plate! The holes in a lift-arm arm may accept axles or pins. They also come in a variety of shapes, including tees, ells 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 lift-arms 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.

Technic™ Bricks and Plates – There are also regular bricks and plates that are adapted for use with Technic™ elements. Technic™ bricks have holes for either pins or axles on the sides and are only one brick wide. One of the most common of these is a 1x2 brick with a single pin hole. Most often, these bricks have pin holes, not axle holes. Technic™ plates have holes on the flat surface between the studs and are a minimum of two bricks wide. The holes in these plates can accept pins or can allow an axle to pass through and still spin.

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.

Sorting Instructions:

This LEGO set comes in the bag labeled 15-17 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.

Build 10
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 15 (6 groups of bricks)
Main Build: Base
Group 1 contains the pieces for steps 1-6. Include a tan 6x14 plate from bag 0.
Group 2 contains the pieces for steps 7-9. Include a gold 1x1 slope tile from step 10.
Group 3 contains the pieces for steps 10-14.
Group 4 contains the pieces for steps 15-17, not including the white pieces from step 16.
Group 5 contains the white pieces for step 15.
Group 6 contains the pieces for steps 18-20. Include two black 7x11 hollow frames, two brown 15L liftarms, and a dark gray 11x15 hollow frame from bag 0.

Bag 16 (2 groups of bricks)
Group 7 contains the pieces for steps 21-28. Include a light gray 13L liftarm from bag 0.
Group 8 contains the pieces for steps 29-31.

Bag 17 (8 groups of bricks)
Group 9 contains the pieces for steps 32-35. Include a dark gray 4x10x6 rock panel from bag 0.
Group 10 contains the pieces for steps 36-39.
Group 11 contains the pieces for steps 40-42. Include a dark gray 4x10x6 rock panel from bag 0.
Group 12 contains the pieces for steps 43-47.
Group 13 contains the pieces for steps 48-50.
Group 14 contains the pieces for steps 51-53. Stack the two brown 1x1 round plates from step 51, but leave the white one loose.

Sub-build
Group 15 contains the pieces for steps 1-7 of the sub-build. Include four tan 1x1 round tiles from step 8 of the sub-build.
Group 16 contains the pieces for steps 8-16.

Building Instructions:

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

Main Build

1.1. We'll start the forge by building the base. Place a dark gray 2x3 plate, horizontally, in front of you.

1.2. Place the right three studs of a tan 1x10 plate, horizontally, on the back row of the previous piece.

2. Place the back row of a dark gray 2x10 plate, horizontally, under the previous piece, to the left of the 2x3 plate.

3. Place a tan 1x3 plate, horizontally, on the back row of the previous piece to the left of the 1x10 plate.

4. Place the back row of a tan 6x14 plate, horizontally, on the front row of the base so the right sides are even. There should be one free stud to the left of the back row of the 6x14 plate.

5.1. Place the back row of a dark gray 2x3 plate, horizontally, under the right three studs of the front row of the previous piece. It will extend one row to the front.

5.2. Place the back row of a dark gray 2x10 plate, horizontally, under the 6x14 plate, to the left of the 2x3 plate. It will extend one row to the left and be even with the 2x10 plate on the back two rows.

6. Place a tan 1x6 plate, vertically, to the left of the 6x14 plate.

Group 2.

7.1. Place the leftmost column of a tan 2x3 plate, horizontally, in front of the previous piece.

7.2. Place a tan 2x10 plate, horizontally, to the right of the previous piece.

8.1. Keeping the 1x6 plate from step 6 on the left, flip the base upside down. Place a dark gray 1x3 plate, upside down and horizontally, on the right three studs on the back row of the base. There should be a 2x3 plate in front of this piece.

8.2. Place a dark gray 1x10 plate, upside down and horizontally, to the left of this piece.

9. Place a dark gray 1x4 plate, upside down and vertically, on the third through sixth studs from the front on the leftmost column of the base. Repeat symmetrically on the right side

You will have a gold 1x1 slope tile leftover when you finish this group.

Group 3.

10.1. Keeping the 1x6 plate from step 6 on the left, flip the base rightside up. Now we will start building some details on the base! Let's start by making a cluster of ore that's ready to get processed. Place a light blue 2x2 round brick in front of you.

Place a black 1x1 brick on the back right stud of the previous piece.

Place a light blue 1x1 technic brick, with the holes facing left and right, to the left of the previous piece.

10.2. Place a dark gray 1x2 triple slope tile, horizontally with the tall side at the back, in front of the previous two pieces.

10.3. Place the leftover gold 1x1 slope tile, with the tall side on the right, on the 1x1 technic brick.

10.4. Place a dark gray 1x1 slope tile, with the tall side at the back, to the right of the previous piece.

10.5. Place this assembly on the second and third rows from the back, leaving two free columns to the right of it.

11.1. Let's make a little furnace. Place a dark gray 2x3 brick, horizontally, in front of you.

Place a dark gray 1x1 slope tile, with the tall side on the right, on the back left stud of the previous piece. Repeat symmetrically on the right side.

11.2. Place the front stud of a dark gray 1x2 slope brick, vertically with the slope at the back, between the previous two pieces.

Place a dark gray 1x1 brick under the back stud of the previous piece.

11.3. Place a black 1x1 half cylinder tile, with the flat sides at the front and back, centered horizontally on the front row of the furnace.

11.4. Place a dark gray 1x3 arch brick, horizontally, on the front row of the furnace. The arched hole should fit perfectly over the previous piece.

11.5. Place a dark gray 1x2 plate, vertically and centered horizontally, on the furnace.

11.6. Place the furnace on the back three rows of the base so there is one free column to the right between it and the cluster of ore.

12.1. Place a light blue 1x1 round plate on the seventh stud from the left on the back row of the base. This is on the row to the left of the furnace. Place another on the second stud from the back on the row to the left of the previous piece.

12.2. Place a light blue 1x1 round tile in front of the front piece from the previous step, and another to the left of the front round plate from the previous step.

13.1. Next we'll make an anvil! Find a dark gray 1x2 arched jumper brick. This piece looks kind of like a letter T. There is a single anti-stud on the bottom, and a single stud on top, but the top is two studs wide like a jumper plate. Place this, horizontally, in front of you.

13.2. Place a dark gray 1x3 tile, horizontally and centered horizontally, on the previous piece.

13.3. Place the anvil on the third stud from the back on the third column from the left on the base. Rotate the anvil 45 degrees clockwise so the 1x3 tile points at the back left corner of the base.

14.1. Place a white 2x2 round tile with a single stud on the fourth and fifth columns from the right of the base, leaving two free rows in front of it.

14.2. Place a tan 2x4 plate, vertically, on the sixth and seventh columns from the left of the base, leaving one free row in front of it. There should be three free columns between this piece and the last piece.

14.3. Place a dark gray 2x2 round plate on the second and third columns from the left of the base, leaving one free row in front of it.

Group 4.

15.1. Place a light gray 2x2 round plate on the previous piece.

15.2. Place a light brown 2x4 tile, vertically, on the 2x4 plate from step 14.2.

15.3. Place a light gray 1x1 plate, angled at 45 degrees, on the white 2x2 round tile with a single stud from step 14.1.

Group 5 has the white pieces from this step.

16.1. Place a black 4x4 circle plate in front of you. This piece is a circle with an open center.

Place a white 1x1 round plate from group 5 on the left stud on the back row of the previous piece.

Place a light gray 1x1 round plate on the back stud of the right column of the previous piece.

16.2. Place a white 1x1 round tile from group 5 in front of the previous piece.

Place a white 1x1 plate from group 5, angled at 45 degrees, on the back stud on the leftmost column of the 4x4 circle plate.

16.3. Place a light gray 1x1 round tile on the left stud on the front row of the 4x4 circle plate.

Place a white 1x1 round plate from group 5 to the right of the previous piece.

16.4. Place the 4x4 round plate on the base so the circular hole goes around the white 2x2 round tile with a stud from step 14.1.

17.1. Find a 1L liftarm with three towballs on it. Place this in front of you, with the hole facing the front and back and the balls on the left, right, and top.

17.2. Slide the axle of a dark tan 3L axle with a stud on one side, with the stud on the back, from the back into the hole of the previous piece.

17.3. Find a light blue axle and pin connector #3 .This piece has two 1L axle connectors which form an angle almost 180 degrees, and a perpendicular pin hole between them. Slide the pin hole, with the axle connectors pointing up and slightly to the left of straight down, over the previous piece.

17.4. Next, we will connect the axle to the central axle hole on top of the two 2x2 round plates on the front left corner of the base. The previous two pieces are not held on by friction, so you will have to hold them on while you rotate the axle to point down. The balls should be at the front, left, and right, and the axle connectors should point straight to the front, and slightly to the left of straight back. Push the axle all the way down.

Group 6.

18.1. Next we'll build the frame on the sides of the base. Find a black 7x11 hollow frame. This looks like two 11L liftarms connected by two 7L liftarms forming an open rectangle. Place this horizontally in front of you.

Push a red 1L pin with a stud on one side, with the stud at the front, into each of the holes on the front side of the back 11L liftarm.

18.3. Push a black 2L pin from group A, from the left, into the front and back holes on the left side of the hollow frame. Repeat symmetrically on the right side.

18.4. Repeat steps 18.1-18.3.

18.5. Rotate one of the frames so it stands upright with the studs from step 18.1 facing up, and the pins from the previous step pointing to the front and back. Place the studs under the leftmost column of the base. Repeat symmetrically on the right side of the base with the other frame assembly.

19. Push a brown 15L liftarm, horizontally with the holes facing the front and back, onto the top pins on the back side of the two frames we just placed. Push another onto the lower pins. These should connect the whole back and give the frame some strength.

20.1. Now we'll build a frame for the front side of the base. Place a dark gray 11x15 hollow frame, horizontally, in front of you.

Push a black 2L pin from group A, from the top, into the second hole from the back on the left and right 11L liftarms on the previous piece.

Push a black 2L pin from group A, from the top, into the fourth hole from the right on the front 15L liftarm.

Push a blue 3L pin from group B, with the stop ring at the bottom, from the bottom in the hole to the left of the previous piece. Push it all the way through so it extends 1L above and below the hollow frame.

20.2. Push the left and right holes of a dark gray 11L liftarm onto the right two pins on the hollow frame. This will be on the pin on the right 11L liftarm, and the right pin on the front 15L liftarm. The liftarm will need to be angled to connect to both pins. Repeat symmetrically on the left side.

20.3. Place a dark gray 11L liftarm, vertically with the holes facing the top and bottom, in front of you.

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

Push the pin from the previous step into the fourth hole from the right on the back 15L liftarm of the hollow frame. The front of the 11L liftarm will fit between the two 11L liftarms from step 20.2.

20.4. Rotate the hollow frame so it stands upright with the three 11L liftarms at the back and the 3L pin from step 20.1 at the bottom.

Push a black 2L pin from group A, from the front, into the third hole from the top on the left 11L liftarm on the hollow frame.

20.5. Push the bottom and third from the top holes on the 11L liftarms onto the two pins on each side of the front of the base. Now the forge should have a box of frames around it! Set the base aside for now.

Bag 16.

Group 7.

21.1. Let's make a mechanism that goes on the side of the base. Place a dark gray 8L axle with a stop on one end, horizontally with the stop on the right, in front of you.

21.2. Slide a light gray 1x1 liftarm, from the left onto the axle. Slide it all the way to the right until it touches the stop.

22. Find a light gray 3L axle and pin connector with a perpendicular pin hole. This looks like a 3L liftarm where the center hole is perpendicular to the two end holes. The end holes are both axle holes. Push the back axle hole of this piece, vertically with the axle holes facing left and right, onto the axle. Push it all the way to the right until it touches the previous piece.

23. Push the axle side of a blue 2L axle/pin connector from group C, from the left into the front axle hole of the previous piece.

24. Find a light gray 2x5 L-shaped quarter ellipse. This looks like a 2x5 L-shaped liftarm, where the space between the legs is filled in with a curve. Push the middle hole of this piece, with the short leg upright at the front and the long leg at the top pointing vertically to the back, onto the left side of the 8L axle. The curved section should be on the bottom. The back hole should slide over the axle. Push it all the way to the right.

25.1. Place a light gray 1x12 technic brick, vertically, in front of you.

25.2. Place a light gray 1x4 brick, vertically and centered vertically, on the previous piece.

Place a light gray 1x4 slope brick, vertically, in front of the previous piece. Repeat symmetrically on the back side.

25.3. Slide the back hole of the technic brick, vertically from the left, over the axle.
26.1. Find a dark gray 3x3x1 square liftarm. This piece is shaped like a square with five holes forming a cross on the flat sides. Two sides are rounded, and the other two sides have two holes each. Place this in front of you, laying flat with the rounded sides on the left and right.

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

26.2. Find a black axle connector with a perpendicular axle hole. This piece has a 1L axle connector on one side, and a perpendicular axle hole on the other. If you were to push axles through both holes they would form a T with the axle connector making the stem. Push the axle connector of this piece, with the holes facing left and right and the axle connector facing to the back, onto the axle side of each piece from the previous step.

26.3. Now, make sure that the 3L axle and pin connector with perpendicular holes from step 22 is laying flat and pointing to the front. Rotate the 3x3 square liftarm 90 degrees towards you so it stands upright with the axle holes of the previous piece at the bottom. Push the axle holes, from the left, onto the axle. Push them all the way to the right until the right one touches the technic brick.

27.1. Find a light gray 3x11 panel. This piece has three pin holes on each short end, seven pin holes on each long side, and four pin holes on the top and bottom. One side is flat, and one side has a gap between the two long rows of pin holes. Place this in front of you, vertically with the flat side at the top.

Push a black 2L pin from group A into the one frontmost, and two rearmost holes on the row of seven holes on both the left and right sides of the previous piece.

27.2. Push a light gray 13L liftarm, vertically with the holes facing left and right, onto the left three pins from the previous step. The front of the liftarm should be even with the front of the 3x11 panel and the back side should extend 2L past the panel.

27.3. Push the pins on the right side of the panel into the holes on the left side of the 1x12 technic brick from step 25.1. The axle should go into the back hole of the 13L liftarm and the front pin on the right side of the panel should go into the front hole on the technic brick.

28. Rotate the assembly 90 degrees so the upright 3x3 square liftarm is on the right. Find the quarter ellipse from step 24. Push the axle side of a light gray 1L axle with a ball on one side, with the ball at the front, from the front into the corner hole of the quarter ellipse.

Group 8.

29.1. Now we'll make a lever with a counterweight to use with the mechanism. Place a red 3L liftarm vertically in front of you, with the holes facing the top and bottom.

Push a light gray 2L pin, from the top, into the back hole of the previous piece. This pin doesn't have friction ridges and should spin freely.

29.2. Push the center hole of a red 9L liftarm, horizontally with the holes facing the top and bottom, centered horizontally on the previous pin.

29.3. Push a tan 3L pin, with the stop ring on the top, from the top into the rightmost hole of the previous piece. Push it all the way through so it extends 1L above and below the liftarm.

29.4. Push a tan 3L pin, with the stop ring on the top, from the top into the front hole of the 3L liftarm from step 29. Push it all the way through so it extends 1L above and below the liftarm.

Push a red 1L liftarm onto the top side of the previous piece.

29.5. Now we'll add this to the mechanism. Rotate the lever 90 degrees towards you so the liftarms are upright and the pins are at the back. The one from the previous step should be on the left. The rest of the mechanism should be horizontally in front of you with the 3x3 square liftarm on the right. Push the right pin of the lever into the hole on the quarter ellipse below the ball, and the other pin into the fourth hole from the left on the technic brick. The 9L liftarm from step 29.2. Should point up and to the left.

30. Now we'll add a counterweight to the lever. Push a light gray wheel into a black rubber tire, and push the wheel onto the pin below the ball.

31. Place the base of the forge back in front of you, horizontally with the tallest frame at the front. There are two pins on the front of the base, one on the bottom row and one on the leftmost upright. Push the second from the right free hole on the back side of the mechanism onto the bottom pin, and then angle the mechanism clockwise until you can connect the other pin to the second hole from the left.

At the front of the forge, there is now an angled 9L liftarm which we placed in step 29.2. If you push down on the left side of it, the 3x3 square liftarm should fall flat. If the lever moves back to its original position, the 3x3 square liftarm will stand back up.

Bag 17.

Group 9.

32. Rotate the forge 180 degrees so the mechanism with the lever is at the back. Push a red 1L pin with a stud on one side, with the stud on top, from the top into the middle three studs on the vertical 11L liftarm on the left and right frames of the base. Set the rest of the forge aside for now.

33.1. Now we'll make some rocks! Place a 4x10x6 rock panel, vertically with the hollow side on the right, in front of you.

33.2. Place a white 2x6 plate, vertically and centered vertically, on the right two columns of the previous piece. Only the front and back rows should attach to studs.

34. Place a lime green 1x1 plate on the tallest stud of the leftmost column of the rock panel. Place another on the second stud from the back on the second column from the left.

35. Place a dark gray 1x1 slope tile, with the tall side at the front, on the third stud from the back on the leftmost column of the rock panel. Place another, with the tall side at the back, on the second stud from the front on the second column from the left.

Group 10.

36.1. Place a green 1x1 plate on the second stud from the front on the leftmost column of the rock panel.

36.2. Place a green 1x2 plate, vertically, on the fourth and fifth studs from the back on the leftmost column of the rock panel.

37.1. Place a dark gray 1x1 technic brick in front of you, with the holes facing left and right.

Push a blue 3L pin from group B, with the stop ring on the left, into the hole on the right side of the previous piece. This pin should extend 2L to the right.

37.2. Push a dark gray 1x1 technic brick, with the holes facing left and right, from the right onto the previous piece. Push it all the way to the left until it touches the other technic brick.

37.3. Repeat steps 37.1-37.2.

37.4. Place one pair of 1x1 technic bricks, with the pin on the right, under the rightmost two studs on the front row of the wall panel. Place the other on the rightmost two studs on top of the front row of the rock panel.

38. Place the front row of a dark gray 2x2 plate on the top pair of technic bricks.

39. Place the forge in front of you, horizontally with the lever at the back. Push the two pins on the right side of the rock wall into the front corner holes on the left side of the forge.

Group 11.

40.1. Now we'll make rocks for the other side. Place a 4x10x6 rock panel, vertically with the hollow side on the left, in front of you.

40.2. Place a white 2x6 plate, vertically and centered vertically, on the left two columns of the previous piece. Only the front and back rows should attach to studs.

41. Place a lime green 1x1 plate on the tallest stud of the rightmost column of the rock panel. Place another on the second stud from the front on the second column from the right.

42. Place a dark gray 1x1 slope tile, with the tall side at the back, on the third stud from the front on the rightmost column of the rock panel. Place another, with the tall side at the front, on the second stud from the back on the second column from the right.

Group 12.

43.1. Place a green 1x1 plate on the second stud from the back on the rightmost column of the rock panel.

43.2. Place a green 1x2 plate, vertically, on the fourth and fifth studs from the front on the rightmost column of the rock panel.

44.1. Place a dark gray 1x1 technic brick in front of you, with the holes facing left and right.

Push a blue 3L pin from group B, with the stop ring on the right, into the hole on the left side of the previous piece. This pin should extend 2L to the left.

44.2. Push a dark gray 1x1 technic brick, with the holes facing left and right, from the left onto the previous piece. Push it all the way to the right until it touches the other technic brick.

44.3. Repeat steps 44.1-44.2.

44.4. Place one pair of 1x1 technic bricks, with the pin on the left, under the leftmost two studs on the front row of the wall panel. Place the other on the leftmost two studs on top of the front row of the rock panel.

45. Place the front row of a dark gray 2x2 plate on the top pair of technic bricks.

46. Place the forge in front of you, horizontally with the lever at the back. Push the two pins on the left side of the rock wall into the front corner holes on the right side of the forge.

47.1. Now we'll build the tops of the two rocks. Place a dark gray 2x4 brick vertically in front of you.

Place a dark gray 1x2 slope tile, vertically with the tall side on the right, centered vertically on the left column of the previous piece.

47.2. Place the leftmost column of a dark gray 2x4 brick, horizontally, on the back two studs of the right column of the first 2x4 brick.

47.3. Place the back two rows of a dark gray 2x4 brick, vertically, under the previous piece and to the right of the first 2x4 brick. Place another to the right of this one.

47.4. Place a dark gray 2x2 slope brick, with the slope at the front, on the front two rows, to the right of the 1x2 slope tile from step 47.1.

Place a dark gray 2x2 double slope brick, with the slopes at the front and right, to the right of the previous piece.

47.5. Place a green 1x2 tile, vertically, on the third column from the left so the back side is even with the back of the assembly.

47.6. Repeat steps 47.1-47.5.

47.7. Place one of these assemblies, with the slope bricks on the left and the slope tile on the back, on the right three columns of the left rock formation. It should be behind a 2x2 plate, and the rightmost column should attach to the studs on the 11L liftarm of the frame. Repeat on the right side.

Group 13.

48.1. Now we're going to make some rocks. Place a dark gray 4x4 octagonal boulder bottom half in front of you.

Place a dark gray 1x1 round plate on the stud inside the previous piece.

48.2. Place a dark gray 4x4 octagonal boulder top half on the bottom half of the boulder, then place the boulder next to the forge. It won't connect to anything, it just sits there.

49.1. Place a dark gray 4x4 octagonal boulder bottom half in front of you.

Place a dark gray 1x1 round plate on the stud inside the previous piece.

49.2. Place the circular anti-stud of a dark gray 2x2 plate on the previous piece.

49.3. Place a dark gray 4x4 octagonal boulder top half on the bottom half of the boulder, then place this boulder to the left of the first boulder.

50.1. Place a dark gray 4x4 octagonal boulder bottom half in front of you.

50.2. Place a dark gray 1x1 round plate on the stud inside the previous piece.

Group 14. This group has a stack of two 1x1 round plates and one loose one. The stacked ones are brown and the loose one is white.

51.1. Place a 2x2 round plate in front of you.

Place a brown 1x1 swirl cone on the back left piece of the previous step.

51.2. Place a tan 1x1 round tile in front of the previous piece.

Take one of the brown 1x1 round plates off of the stack and place it to the right of the previous piece.

Place a white 1x1 round plate behind the previous piece.

51.3. Place the last brown 1x1 round plate on the previous piece.

51.4. Place the circular anti-stud of the 2x2 round plate on the 1x1 round plate inside the boulder bottom.

52. Place a dark gray 4x4 octagonal boulder top half on the bottom half of the boulder.

53. Place the last boulder to the left of the second boulder. You should now have three boulders next to the forge.

Group 15.

Sub-build: Circle with a ring

1. Now we're going to build a circle which has a ring on top. Place a dark gray 4x8 half circle plate, horizontally with the flat side at the back, in front of you. Place another symmetrically behind the first so the two pieces form a full circle.

2. Place a dark gray 4x8 half circle plate, vertically with the flat side at the right, on the left four columns of the previous two pieces.

3. Repeat the previous step symmetrically on the right so the circle is now two plates high and fully connected.

4.1. Place a dark gray 1x2 plate with rounded ends, horizontally and centered horizontally, on the front and back rows of the assembly.

4.2. Place a dark gray 1x2 plate with rounded ends, vertically and centered vertically, on the leftmost and rightmost columns of the assembly.

5. Place a dark gray 1x1 round plate on the leftmost and rightmost studs of the second rows from the front and back of the assembly. These four pieces should form a square.

6. Find a light gray 3x3 rounded corner tile. This tile is cut out so it looks like a macaroni noodle, I'll call it a "3x3 macaroni tile" from now on. Place the front right stud of this piece, with the straight sides on the right and back behind the left stud of the front 1x2 plate with rounded ends from step 4.1. The back stud should be to the right of the left 1x2 plate with rounded ends from step 4.2. Place three more 3x3 rounded corner tiles so they form a circle.

7. Make another circle around the outside of the assembly using four brown 4x4 macaroni tiles. The starting point doesn't matter.

You will have four tan 1x1 round tiles when you finish this group.

Group 16.

8.1. Place a light gray 6x6 round plate in front of you.

8.2. Place one of the leftover 1x1 round tiles on the right stud on the front row of the previous piece, another on the back stud of the leftmost column, another on the front stud of the rightmost column, and the last on the left stud of the back row.

8.3. Place a yellow 1x1 round tile to the left of the front previous piece, another in front of the left previous piece, another behind the right previous piece, and the last to the right of the back previous piece.

9. Find a black 4x4 turntable base. This looks like a 4x4 tile that has a raised ring in the center, and a hole through the center. Place this, centered vertically and horizontally, on the 6x6 round plate. It should fit between all of the 1x1 round tiles.

10. Place a light gray 6x6 round plate, centered vertically and horizontally, on the previous piece. It won't connect to any studs, but it will click when it is correctly seated on the turntable. The 6x6 round plate should be able to spin relative to the bottom 6x6 plate.

11. Place a light gray 4x4 round plate, centered vertically and horizontally, on the previous piece.

12. Make a circle around the outside edge of the previous piece using four light gray 2x2 macaroni tiles. The starting point doesn't matter.

13. Place a brown 2x2 ribbed round brick on the four studs between the previous four pieces.

14.1. Push a red 2L axle into the axle hole of a red ball and set this in front of you with the ball on the left.

14.2. Find a black 7x7 ring with two 1L axle connectors. This piece is a large ring which has two axle connectors opposite each other. Rotate this piece, so that it is flat like a basketball hoop, with the axle connectors on the left and right. Push the axle from the previous step, with the ball on the left, from the left into the right axle hole of the 7x7 ring.

14.3. Push a brown 3L axle with a stop on one side, with the stop on the right, from the right into the left axle hole of the 7x7 ring. Push it all the way through so it extends 1L to the left.

14.4. Rotate the ring so it is upright with the side with the ball at the top and the hole of the ring facing front and back. Push the bottom axle on the bottom into the axle hole on the top of the 2x2 ribbed round brick from step 13.

15. Place this assembly, centered vertically and horizontally, on the 8x8 circle we made previously. It won't connect, but will sit inside the outer ring of macaroni tiles.

16. Place the completed circle with a ring on top next to the forge.

Congratulations! Now this build is complete!