FIRST® LEGO® League Challenge UNEARTHED™ Building Instructions

Build 4: Statue Rebuild

This build is 62 pieces, and 19 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 6 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 4
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 6 (5 groups of bricks)

Main Build:
Group 1 contains the pieces for steps 1-5.
Group 2 contains the pieces for steps 6-10.
Group 3 contains the pieces for steps 11-14.
Group 4 contains the pieces for steps 15-17
Group 5 contains the pieces for steps 18-19

Building Instructions:

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

Main Build

1.1. This build is called a statue, but it looks like a seal when finished. For this build, try to build everything flat on the table as much as possible! Most things are connected by pins and can rotate very easily. If you pick it up it might be very hard to determine the right orientation.

1.2. We'll start by building the tail flippers. Find a dark gray curved panel #3. This piece has two 1L axle connectors which form an angle almost 180 degrees, and a perpendicular pin hole between them. It has a panel that extends beyond the axle connectors on one side. This panel is curved on one side and recessed on the other. Place this piece in front of you, with the axle holes on the left and right and the curved panel on top at the back so it forms a point at the back.

1.3. Push the axle side of a blue 2L axle/pin combo from group C, with the pin on the right, into the right hole of the previous piece.

1.4. Push a black 2L axle into the left axle hole of the curved panel.

2.1. Find a dark gray panel fairing #8, very small, smooth, short, side B. This piece has one smooth, curved side and one hollow side. It has two axle holes in a T-shaped pattern. If you stand it up on the axle hole that is the stem of the T, with the smooth, curved side at the back, the left side of the fairing should be pointed and the right side should be straight. Rotate this piece so the fairing is horizontal, with one axle hole at the front and the other on the right, with the smooth, curved side on top and the point on the left. Push the right axle hole onto the axle from the previous step.

3. 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. Place this piece in front of you, with the short leg upright at the front and the long leg at the bottom pointing vertically to the back. The curved section should be on top. Push the second hole from the back onto the pin on the right side of the curved panel.

4. Push a black 2L pin from group A, from the right, into the rearmost and middle holes on the right side of the previous piece.

5. Push the rearmost and middle holes of a light gray 2x5 L-shaped quarter ellipse, with the short leg upright at the front and the long leg at the bottom pointing vertically to the back, from the right onto the previous two pieces.

Group 2.

6.1. Place a dark gray curved panel #3, in front of you, with the axle holes on the left and right and the curved panel on top at the back so it forms a point at the back.

6.2. Push the axle side of a blue 2L axle/pin combo from group C, with the pin on the left, into the left hole of the previous piece.

6.3. Push a black 2L axle into the right axle hole of the curved panel. Rotate this piece so the fairing is horizontal, with one axle hole at the front and the other on the left, with the smooth, curved side on top. Push the left axle hole onto the axle from the previous step.

6.4. Find a dark gray panel fairing #7, very small, smooth, short, side A. This is the mirror of the piece from step 2.1. Rotate this piece so the fairing is horizontal, with one axle hole at the front and the other on the left, with the smooth, curved side on top and the point on the right. Push the left axle hole onto the axle from the previous step.

6.5. Push the pin on the left of this assembly into the second hole from the back of the right 2x5 L-shaped quarter ellipse from step 5. The tail flippers should look kind of like a letter T now.

6.6. Next, we'll start building the rest of the seal's body. Rotate the assembly 90 degrees clockwise so the curved panels are now vertically at the right and the quarter ellipses are on the left.

7.1. Find a light gray 3x7 bent liftarm. This looks like a 7L liftarm and 3L liftarm connected at a 135 degree angle. It looks kind of like a hockey stick. The holes at each end are axle holes. Rotate this so the 7L side is horizontally pointing to the right with the 3L side on the left pointing up. The holes should face front and back.

7.2. Push a light gray 5L axle from the front into the rightmost hole of the previous piece. Only push it back until the back side is even with the back of the previous piece. It should extend 4L to the front.

7.3. Push a light gray thin bushing, from the front, onto the previous piece. Push it all the way back until it touches the bent liftarm.

7.4. Push a black 2L pin from group A, from the front, into the fourth and sixth holes from the left side of the bent liftarm. There should be one hole between these pins, and two holes between the right pin and the axle.

7.5. Push a light gray 3L liftarm, horizontally with the holes facing the front and back, from the front onto the previous two pins.

7.6. Find a tan 4L axle with a center stop. This axle has a 2L axle side and a 1L axle side with a cylindrical section between them that prevents it from being pushed through an axle hole. Rotate this piece so it is vertical with the 1L axle side at the front. Push the 1L axle side into the leftmost hole of the bent liftarm so the axle extends 3L to the back.

7.7. Push the right axle of this assembly, from the back, into the axle holes on the bottom left corner of the two L-shaped quarter ellipses on the rest of the build. Push the axle all the way forward. It should extend 1.5L to the front.

8. Push a light gray thin bushing, from the front, onto the front side of the axle. Push it all the way back.

9.1. Place a light gray 3x7 bent liftarm in front of you, horizontally with the 7L side horizontally pointing to the right with the 3L side on the left pointing down. This piece won't lay flat, it will rest on the left and right tips.

9.2. Push a yellow 3L axle into the leftmost hole of the previous piece. Push it in so it extends evenly to the front and back.

9.3. Push a light gray 5L axle into the rightmost hole of the bent liftarm from step 9.2. Push it in so it extends evenly to the front and back.

9.4. Push a light gray thick bushing, from the front, onto the previous piece. Push it all the way back until it touches the bent liftarm. Repeat symmetrically on the back side.

9.5. Back on the main build, find the rightmost free hole on the bent liftarm. Slide the back side of the right axle on the second bent liftarm into this hole.

10.1. Place a light gray 3L liftarm in front of you, horizontally with the holes facing the front and back.

10.2. Push a black 2L pin from group A, from the front, into the left and right holes of the previous piece.

10.3. Push the fourth and sixth holes from the left of a light gray 7x3 liftarm, with the 7L side horizontally pointing to the right and with the 3L side on the left pointing up, onto the previous two pins. The right side of this liftarm should lay flat on the table.

10.4. Push the axle side of a tan 2L axle/pin combo, with the pin at the front, from the front into the leftmost hole of the bent liftarm.

10.5. On the main model, find the axle which is extending to the front from the fifth hole from the right. Push the rightmost hole of the bent liftarm onto this hole.

Group 3.

11.1. Find a light gray 1x11.5 double bent liftarm. This piece looks like a 7L liftarm and a 3L liftarm connected by another small liftarm. The 3L liftarm is at a right angle to the 7L liftarm. It looks kind of like your finger if you bend each of the two joints at 45 degrees. Place this in front of you with the 7L liftarm horizontally at the bottom pointing to the left and the 3L liftarm on the right pointing up.

11.2. Push a yellow 3L axle, from the front into the leftmost hole of the previous piece. Only push it back until the back side is even with the back of the previous piece.

11.3. Push a tan 3L pin, with the stop ring at the back, from the front into the hole to the right of the previous piece. This piece does not have friction ridges so it should spin easily. Note that this is not one of the blue 3L pins from group B.

11.4. Push a blue 3L pin from group B, with the stop ring at the back, from the front into the corner hole on the 7L liftarm of the double bent liftarm. There should be four free holes between this piece and the previous piece.

11.5. Push a dark gray 1L liftarm onto the previous piece. Push it all the way back until it touches the double bent liftarm.

11.6. Push the bottom hole of a light gray 13 L liftarm, upright with the holes facing front and back, onto the tan 3L pin from step 11.3. When this is connected, let the liftarm rotate to the left and rest at an angle on the axle.

11.7. Find the leftmost axle on the rest of the build. This is on the 7x3 bent liftarm that’s in between the other two. Slide the axle into the second hole from the top of the double bent liftarm. You’ll have to lift up the 7x3 bent liftarm to make this work. Everything won’t actually be connected yet!

12.1. Next, we’ll build the seal’s head and neck. Rotate the 13L liftarm from step 11.6 clockwise until it rests on the 7x3 bent liftarm.

12.2. Find a light gray cam. This piece is about 2x3 and is teardrop shaped with four axle holes. Place this horizontally in front of you, with the pointed side on the left and the axle holes on top.

12.2. Push a black 2L axle, from the top, into the left and right holes of the previous piece. Only push them in until they are flush with the bottom of the previous piece.

12.3. Slide the leftmost and third from the left holes of a light gray 3x5 L-shaped liftarm, with the 5L liftarm horizontally at the back pointing to the left and the 3L liftarm vertically on the right pointing forwards, down over the previous two axles. The previous two pieces should extend a little bit above this piece. The short part of this liftarm is the neck.

12.3. Push the leftmost and rightmost holes of a light gray cam, with the pointed side on the left, onto the two axles. The two cams are the sides of the seal’s head!

12.4. Push a tan 3L pin, with the stop ring at the top, from the top into the hole on the L-shaped liftarm to the right of the two cams.

12.5. Rotate the head and neck so the cams are at the left and the 3L side of the 3x5 L-shaped liftarm is upright on the right, pointing down. Slide the bottom hole of the 3L liftarm, from the front, onto the axle on the leftmost side of the main build. Let the cams rotate counterclockwise and rest on the table.

13. The front side of the main build should now have four free pins and two free axles. Take a light gray 1x11.5 double bent liftarm, with the 7L liftarm horizontally at the bottom pointing to the left and the 3L liftarm on the right pointing up, and push the leftmost hole onto the leftmost free axle. The right free axle should go into the second hole from the top on the right side of the double bent liftarm. The leftmost and rightmost pins on the main build should still be free.

14. Find a piece that looks like two light gray 3L liftarms connected by a long, angled rail. Place one of the 3L liftarms horizontally on the table with the holes facing the front and back, and with the rail angling up and away from you to the left so the other 3L liftarm is farther back than the first. Connect the leftmost hole of the left 3L liftarm to the leftmost free pin on the front of the main build, and connect the leftmost hole of the right 3L liftarm to the rightmost free pin. Repeat symmetrically on the back side, with the exception that the right liftarm will slide over an axle rather than connect to a pin.

Group 4.

15.1. Now we'll build the seal's other two flippers. Place a red 3L liftarm horizontally in front of you, with the holes facing the front and back.

15.2. Push a black 2L pin from group A, from the back, into the middle and rightmost holes of the previous piece.

15.3. Push the pin side of a tan 2L axle/pin combo, with the pin at the back, from the front into the leftmost hole of the 3L liftarm. This pin does not have friction ridges so it should spin easily.

15.4. Push the axle hole of a dark gray 2L liftarm with one axle hole and one pin hole, horizontally with the holes facing the front and back and the axle hole on the right, onto the axle side of the previous piece.

15.5. Push the pin side of a tan 2L axle/pin combo, with the pin at the back, from the front into the leftmost hole of the previous piece. This pin does not have friction ridges so it should spin easily.

15.6. Push the back hole of a dark gray curved panel #3, with the axle holes at the front and back and the curved panel on top at the left so it forms a point at the left, onto the axle side of the previous piece.

15.7. Push a black 2L axle into the front hole of the previous piece.

15.8. Push the back axle hole of a dark gray panel fairing #8, with one axle hole at the back and the other on the right, with the smooth, curved side on top and the point at the front, onto the axle from the previous step.

15.9. Find the front piece with two 3L liftarms connected by a rail. Push the two pins on the assembly we just made into the right two holes on the right 3L liftarm.

16.1. Keeping it flat on the table, rotate the main build 180 degrees so the assembly we just attached is at the back. Place a dark gray 2x4 L-shaped liftarm, with the 2L side at the bottom pointing to the back, and the 4L side pointing up at the front, in front of you.

16.2. Push a light gray 2L pin, from the right, into the back hole on the 2L side of the previous piece. This piece does not have friction ridges so it should spin easily.

16.3. Find a dark gray 3L axle and pin connector with two perpendicular pin holes. This looks like a 3L liftarm, except that the hole on one end is an axle hole that is perpendicular to the two pin holes. Rotate this so it is vertical, with the pin holes at the front facing left and right. Push the middle pin hole, from the right, onto the previous pin.

16.4. Rotate this assembly 90 degrees towards you so the 4L side of the L-shaped liftarm is laying flat and the axle hole of the previous piece is on top facing the front and back.

16.5. Find the axle on the front of the main build. Push the axle hole of the previous piece onto the axle. You will have to rotate the assembly we made about 45 degrees counterclockwise. The axle will still extend 1L to the front.

17. Push the axle hole of a dark gray 2L liftarm with one pin hole and one axle hole, with the axle hole at the bottom right, from the front onto the axle.

Group 5.

18.1. Place a dark gray curved panel #3, in front of you, with the axle holes on the left and right and the curved panel on top at the front so it forms a point at the front.

18.2. Push a black 2L axle into the left axle hole of the previous piece. Repeat symmetrically on the right side.

18.3. Push the right axle hole of a dark gray panel fairing #7, with one axle hole at the back and the other on the right, with the smooth, curved side on top and the point at the left, onto the left axle from the previous step.

18.4. Push the right axle of this assembly, from the left, into the front hole of the L-shaped liftarm from step 16.1. This flipper should point to the left.

19. Now we'll stand the seal up! Lift the head, which is on the right side of the body as high as it will go. Once it is high enough, the front flipper should catch on the left 3L liftarm of the two light gray 3L liftarms connected by a long, angled rail on the front side of the body. This will prevent the head from falling back down, and keep the seal's body upright! If you want it to lie flat again, bring the front flipper towards you.

Congratulations! Now this build is complete!

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