10266 NASA Apollo 11 Lunar Lander
Set Adapted by Lev Smolsky

You were born to explore the universe! Build and inspire the next generation of astronauts with LEGO® Space rockets and vehicles - Let's Go!

Celebrate man's first moon landing with this LEGO® Creator Expert 10266 NASA Apollo 11 Lunar Lander building set-developed in cooperation with NASA to mark the 50th anniversary of a historical event that captivated the world. This collectible model features a highly detailed replica of Apollo 11's Eagle lunar module, plus a depiction of the lunar surface, complete with crater, footprints and a U.S. flag. The descent stage comes with gold-colored landing pads and panels, opening camera and laser hatches, and a ladder, while the ascent stage has a detailed interior with room for 2 astronauts. Finished with an Apollo 11 Lunar Lander nameplate, this display model makes a great centerpiece for the home or office and provides a challenging and rewarding building experience full of nostalgia. Includes 2 astronaut minifigures with NASA decoration and golden helmets. The front of the box shows the Lunar Lander sitting on the surface of the moon, with earth visible 250,000 miles away. Neil Armstrong is standing on the surface of the moon and proudly holding the American flag while Buzz Aldrin is climbing down the ladder to join him on the lunar surface. Both are wearing their white space suits with shiny gold helmets, and life support backpacks. The back of the box shows images of the lander’s feet, supporting legs, and the major components of the lander: the base and the ascent vehicle.

* The set includes 2 astronaut minifigures with NASA decoration and golden helmets.
* This advanced LEGO® set features a detailed replica of the Eagle lunar lander with separate ascent and descent stages, plus a depiction of the lunar surface with crater, footprints and a U.S. flag.
* Descent stage features new-for-June-2019 gold-colored landing pads and panels, opening camera and laser hatches and a ladder.
* Celebrate space exploration with this highly detailed display model.
* This set has 1,087 pieces and 207 steps, (28 steps in bag 1, and 179 steps for bags 2-4)
* Measures over 7" (20 cm) high, 8" (22cm) wide and 7" (20cm) deep.

The Race to the Moon

Humanity’s sense of wonder, fascination and awe of space is as old as humanity itself. But our desire to explore the universe beyond the realms of earth did not take flight until the 1960s. Following John F. Kennedy’s declaration that America would put a man on the Moon (and return him safely to Earth) by the end of the 1960s, NASA led the way, placing the USA firmly at the forefront of the global race to explore space. Others may have ventured into the vacuum of space, but it was on the 20th of July 1969, that a human footprint first made contact with the surface of the Moon. The landing of the Apollo Lunar Lander was broadcast live to a global audience. It was a moment that captivated the world and changed space travel forever. In the visual instructions, there are pictures of President Kennedy’s speech, newspaper photos of the Saturn V, the command module, liftoff and Earth rise, as seen from the far side of the moon.

A Pioneering Vehicle, A Tribute to Creativity and Innovation

The Apollo 11 Lunar Lander “Eagle” was an extraordinary vehicle, representing the first crewed vehicle to land anywhere beyond Earth, and the vehicle that brought the first man onto the Moon. But more than that, the fragile-looking spacecraft represents humankind’s curiosity, ingenuity, technological skill, determination and bravery. It illustrates how creative lateral thinking and perseverance can bring immense advances for the benefit of all mankind.

This LEGO® Creator Expert tribute to the Apollo 11 Lunar Lander represents something truly astonishing, an authentic human marvel. Even now, over 50 years later and with the many changes we have experienced in our lifetimes, this vehicle was part of the creative and technological drive to put a

human past the comfort zone of our atmosphere. The Apollo 11 Lunar Lander allowed us to venture into the vast unknown of space and touchdown on the Moon, and that is truly astounding.
In the visual instructions, there are pictures of the lunar lander on the moon, test flights, inside the command module and the first footprint on the surface of the moon.

About NASA - The Apollo Program

In 1958, the National Aeronautics and Space Act was passed, expressing that “It is the policy of the United States that activities in space should be devoted to peaceful purposes for the benefit of all mankind.” As a result, the National Aeronautics and Space Administration (NASA) was founded over 60 years ago for the purpose of leading the peaceful exploration of space, making discoveries about the Earth, its solar system, and the universe. Since then, NASA research has not only led to the exploration of space, but it has also made great advances in aviation, helped to develop a commercial space industry, enriched the US economy and created jobs. It was after a series of earlier Mercury, Gemini and Apollo missions, as well as the work of thousands of expert scientists, engineers and astronauts, that Neil Armstrong and Buzz Aldrin landed the Lunar Module on July 20th, 1969 and walked on the Moon. The entire program ran from 1961 to 1972 and set several human spaceflight milestones. Apollo 8 was the first manned spacecraft to orbit another celestial body, while the final Apollo 17 mission was the sixth Moon landing. The program was not only groundbreaking in terms of space exploration, it catalyzed technological development in avionics, telecommunications and computers. In the visual instructions, there are pictures of the lunar lander on the moon, test flights, inside the command module and the first footprint on the surface of the moon.

We Came in Peace … What was Left Behind

Humankind’s initial step on the surface of a celestial object was born out of a race to be the first; the Moon landing, made possible by the Lunar Lander, was a huge achievement for American technological pride and prowess, as well as a tremendous moment for all humanity. John F. Kennedy’s bold and ambitious call to action did not end with the successful Apollo 11 mission; it set off a new era for NASA and for humanity’s exploration of the unknown. NASA’s work today still focuses on technological innovation and discovery, pushing boundaries toward human exploration of the Moon and Mars, and reaching beyond to find the answer to the question, “Are we alone?”

Many things were left on the Moon after that initial landing by the Eagle. Part of the descending rocket for returning the astronauts back to Earth, as well as the laser reflector and the footprints of the two astronauts remain on the moon. They also left an Apollo 1 mission patch, a memorial bag with a gold replica of an olive branch as a traditional symbol of peace, and a silicon message disk with the goodwill statements of U.S. presidents Eisenhower, Kennedy, Johnson and Nixon, and messages from leaders of 73 countries around the world. Commemorative medallions were also left on the surface of the Moon, that honor the memories of the Apollo 1 astronauts who lost their lives in a launchpad fire, and two cosmonauts who also died in accidents. In the visual instructions, there is a picture of the commemorative plaque that had this inscription: “Here men from the planet earth first set foot upon the moon, July 1969. They came in peace for all mankind” It was signed by the astronauts and President Nixon.

The Apollo 11 Mission Key Moments

July 16, 1969 - Apollo 11, the first manned space flight to land on the Moon, launched into space. There is a picture of liftoff of the Saturn V rocket and the Lunar Lander on board.

July 17, 1969 - Astronauts Neil Armstrong, Michael Collins and Edwin ‘Buzz’ Aldrin made their first TV transmission to Earth from space. There is a picture of the Lander on the surface of the moon, with an astronaut descending the ladder.

July 20, 1969 - Armstrong and Aldrin boarded the Lunar Lander “Eagle” and disengaged from the Apollo Command Module “Columbia.” The Lunar Lander touched down on the Moon in the “Sea of Tranquility.” The two astronauts spoke to President Richard M. Nixon from the Moon’s surface. They spent 2.5 hours collecting samples, setting up equipment, taking pictures and leaving special items. There are pictures of the lunar lander as id descended to the surface of the moon, and after it landed, sitting alone on the gray powdery soil. “The Eagle has landed”!

July 21, 1969 – After a rest period for the astronauts, the module ascended and returned to Command Module Columbia and docked, reuniting Armstrong and Aldrin with Collins. The Lunar Lander was then jettisoned into lunar orbit. There is a picture of the ascent module flying above the moon, with the earth in the background.

July 22, 1969 – On the way back to Earth, a midcourse correction and two more television transmissions were made. There is a picture of the ground command team at their computer screens.

July 24, 1969 – The Apollo 11 capsule and astronauts on board landed back on Earth, splashing down into the Pacific Ocean. There is a picture of the command module capsule floating in the Pacific Ocean, with orange floatation collars holding it upright, so the crew could exit safely into a raft, then to travel to an aircraft carrier to take them home.

In the visual instructions, there is another picture of the first footprint on the surface of the moon, with the quote from Neil Armstrong: “That’s one small step for (a) man, one giant leap for mankind”.

Fun Facts
For both the actual Lunar Lander and our LEGO® tribute, blueprints like these are the beginning of every design process. There is a picture of the blueprint for the Lunar Lander, and the LEGO designer Lars Joe Hylding, Design Manager Specialist. This is how the design of the original module was translated into LEGO bricks. The golden bricks represent the foil that the Lunar Lander was wrapped in, for thermal and micrometeoroid protection. The two main elements of the Lunar Lander are the ascent stage and the descent stage. On the ascent stage, among other things, I focused mostly on the “face” with the two windows and the door. The ascent stage has a lot of angles that I had to build in a more simplified way due to the scale. On the descent stage, among other things, I focused on capturing the octagon shape, the legs, and the shiny foil.

Fun Facts
…designed by MIT, the computer on board the Lunar Lander, the Apollo Guidance Computer (AGC), provided the guidance, navigation and control of the spacecraft. The computer’s performance was comparable to first-generation home computers available in the late 1970s but is similar to a simple calculator today.

Welcome to text-based instructions from LEGO for the Blind. Before you start building, here are some terms we'll be using:
- Front: towards you.
- 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 back.
- Horizontally: going from left to right.
- Upright: pointing up towards the ceiling, and down towards the floor.
- 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.

For builders with low vision, or a sighted building partner may want to follow along with the printed visual instructions that come with each kit or PDF versions are always online at LEGO.com for each set: https://www.lego.com/en-us/service/buildinginstructions/10266. As low vision users may benefit from viewing the instructions on a personal device where they can zoom

Box Contents
The box contains a booklet with visual building instructions and unnumbered bags.
Bag 1: Lunar surface plate, American flag, and astronaut 1
Bag 2: Lander capsule interior
Bag 3: Lander bottom - landing pads, panels, ladder
Bag 4: Capsule top - camera, accessories, and astronaut 2

To begin a successful build, it helps to sort the pieces into groups, bags or small containers. Have a friend or family member do this in advance following the instructions below. You will see that the pieces should be sorted according to the building steps in the kit. Doing this in advance makes locating the pieces for each step easier. See below on how to sort the pieces to correspond to the steps in this set. Number the containers using letters A-Z, numbers or meaningful names. The parts will be sorted into one or a small number of steps in the instructions. Example: Steps 1-3 means collect all the parts used in steps 1, 2 and 3, and put them in one container.

Sorting the pieces

Bag 1 (8 groups of bricks)
Minifigure Parts - Legs, torso, head, gold helmet and life support backpack
Steps 1-5, 6-10, 11, 12-14, 15-20, 21-25, 26-28

Bag 2 (9 groups of bricks)
Steps 1-2, 3-8, 9-15, 16-17, 18-21, 22-33, 34-49, 50-72, 73-79

Bag 3 (5 groups of bricks)
Steps 80-83, 84-89, 90-101, 102-112, 113-115

Bag 4 (11 groups of bricks)
Minifigure Parts - Legs, torso, head, gold helmet and life support backpack
Steps 116-123, 124-134, 135-139, 140-143, 144-149, 150-154, 155-166, 167-179

Assemble the first astronaut minifigure. Connect the white legs to the white torso. The white space suit he is wearing has the NASA logo, and some pockets. Connect the yellow head. Now connect the gold helmet and life support backpack He is ready for the moon!

Let's get started building the lunar surface.

We'll do this using the contents of bag 1 and seven 2x16 plates, one 6x16 plate, and one 6x16 plate with studs only on 3 edges and a smooth center.

1. Hold one black 2x16 plate vertically, then hold one dark gray 2x14 plate vertically above it, overhanging it by one column to the left.

2. Center the top plate vertically and put it on the 2x16 so that the 2x14's left column overhangs, and the front row back row and the right column of the 2x16 should be free.

3. Find three black 2x3 plates. Place them horizontally on the table to the left of the current assembly-- Align one flush with the top edge, one flush with the bottom edge, and one centered horizontally on the 2x16 plate. Press to connect them with the top plate. Your frontmost 3x2 will connect by its back right stud, your middle 3x2 will connect by its rightmost column and your top 2x3 will connect by its front right stud.

4. Find another dark gray 2x14 plate. Place it vertically onto the 3 horizontal pieces, leaving a 1 stud gap to its right.

5. Find three black 2x16 plates. Lay them horizontally on the table to the left of the current assembly. Align one flush with the back, one flush with the front, and one centered on the 2x14 plate. Press to connect them with the top plate.

6. Find two dark gray 2x14 plates, one black 2x2 round plate and two light gray 1x1 round plates. Reference the second vertical 2x14 plate from the right. Skip 4 studs to the left from it and put a 2x14 plate vertically there. Skip two studs to the left, and repeat. Find the second 2x14 plate from the right and place the 1x1 round plates on the studs directly to the left of this piece on the top and bottom horizontal plates. In between the third and fourth vertical plates, press the 2x2 round plate into the 2x2 space they create on the center horizontal plate.

7. Find another dark gray 2x14 plate and two more light gray 1x1 round plates. Skip 4 studs from the leftmost vertical 2x14 plate and put the 2x14 plate vertically there, its left column overhangs to the left. Place the 1x1 round plates, one directly to the right of this plate's front row, and the other symmetrically at the back.

8. Find three black 2x3 plates. Place them horizontally on the table to the left of the current assembly. Align one flush with the Back edge, one flush with the front edge, and one centered horizontally on the 2x16 plate. Press to connect them with the vertical plate.

9. Find another dark gray 2x14 plate. Skip one column to the left from the leftmost vertical 2x14 plate and place your 2x14 plate vertically there, its left column overhangs to the left.

10. Find another black 2x16 plate. Place it vertically underneath and to the left of the previous plate and press to connect.

Good work! This assembly is the framework of our lunar surface and should now be 26x16 and symmetrical. Let's put it aside and get started on the next phase - creating the surface.

11. Heads up! You will complete these steps twice.

1. Find a light gray 2x12 plate, and a black 2x16 plate. Place them horizontally, with the larger plate underneath. One row of the 2x12 overhangs to the front, and two columns are free to its left and its right. Press to connect.

2. Find a light gray 4x12 plate and align it with the 2x12 plate to create a 6x12 surface. Press to connect.

3. Find two light gray 6x6 plates and connect them on each side of the current assembly to create a 6x24 surface.

4. Let's work on the back. Flip the assembly over. Find another black 2x16 plate and a black 2x10 plate and be sure to flip them over too. Below the existing 2x16, align the additional 2x16 and the 2x10 end to end with the shorter piece on the right, so that the leftmost column of the 2x16 overhangs at the left, and the rightmost column of the 2x10 plate overhangs at the right. The front row of these plates should overhang to the front.

5. Find two black 2x4 plates and orient them vertically --again, flip these over. Place one vertically behind the leftmost two columns of the front row of plates, its left column overhanging to the left. Repeat symmetrically at the right. Find two black 2x2 round plates. Place them behind the original 2x16 at the back left and the back right of it.

6. Repeat steps 1-5 to create a second identical assembly. Flip these assemblies face up again.

12. Let's grab that first assembly. While positioned horizontally, connect each assembly from step 11 to the top and bottom. You should now have a 28x26 rectangular platform with a 1 stud recessed outer border. Find nine black 1x8 tiles. One of them contains text which reads "Apollo 11 Lunar Lander". If you can identify that one, set it aside for the next step. Begin in the top left corner and place three tiles on that border horizontally--4 free studs should remain to the right of the last tile. Go back to the top left corner and place three 1x8 tiles vertically on the leftmost column of the build, in front of the leftmost horizontal 8x1 tile's leftmost stud. Then place three more horizontally at the front 4 free studs should be to the right of the rightmost tile.

13. Find two black 1x4 tiles, two more black 1x8 tiles, and the tile with text if you have identified it. Place the two black 1x4 tiles horizontally on the bottom right and top right edges, in the 4-stud gaps, and the remaining three tiles vertically at the right edge, with the Lunar Lander tile in the middle. Our entire border should be covered with tiles.

14. Let's get started on the moon's surface now! Turn your build so that the Lunar Lander tile is at the front. All the pieces used in this step are dark gray. Find three 2x4 tiles, two 4x6 plates with smooth centers, and two 4x4 plates with a square hole in the center. We'll be placing a column of plates on the right end of the lunar surface. Start at the back right corner and place the first 4x4 square plate there. Place the first 4x6 plate in front of the previous piece so the studs form a print letter C, studs at the left, front, and back. Place each of the two 2x4 tiles horizontally in front of the previous piece. Add the second 4x6 plate to the front, so it also forms a letter C. Then put the 4x4 square plate, in front, and a 2x4 tile horizontally in front of that.

15. All the pieces in this step are dark gray except for the 1x1 round plate which is light gray. Find one 6x16 plate, two more 4x6 plates with smooth centers, three more 2x4 tiles, and a 1x1 round plate. Directly to the left of the previous column, starting at back, place a 4x6 plate with the studs oriented as a letter U, studs at the front, left, and right, then the 6x16 vertically in front of it, then another 4x6 plate with smooth center oriented as a letter U vertically in front of the previous piece. Place two 2x4 tiles horizontally to the left of the existing 2x4 tiles at the front. Place another 2x4 tile horizontally in the row to the back, flush to the corner of the last laid 2x4 tile and the lower 4x6 plate. Place the 1x1 round plate in the corner made by the two 2x4 plates.

16. All the pieces in this step are dark gray. Find two 4x8 plates, two 1x10 plates, and two 2x4 tiles. Starting at the back, add two 2x4 tiles vertically, side by side, to the left of the smooth 4x6 plate with smooth center whose studs are in the shape of a U. In front of that one add one 1x10 plate horizontally, and flush with the corner. Then add two 4x8 plates vertically, and one more 1x10 plate horizontally flush with the existing pieces.

17. All the pieces in this step are dark gray. Find one 4x6 plate with a smooth center, three 2x2 L-shaped plates, and one 6x16 plate with a smooth center. Starting at the back, place a 4x6 plate with the studs oriented as a letter U, studs at the front, left, and right. In front of the existing 1x10 plate, add the 6x16 plate with the studs oriented as a letter C, studs at the left, front, and back. In front of the existing 1x10 plate, add the three 2x2 L-shaped plates horizontally next to each other. They should be oriented like the number 7, or like the braille letter d--point of the corner at the top right.

18. All the pieces in this step are dark gray. Find 4 more 2x2 L-shaped plates. In front of the three you just connected, orient the pieces as the letter L or the braille letter H and place them horizontally next to each other. The fourth L should nest around the 1x1 round plate from step 15.

19. All the pieces in this step are dark gray. Find two 4x6 plates with a smooth center, three 2x4 tiles, and two 4x4 plates with square holes. Starting at the back and place the first 4x4 square plate. Below it, place the first 4x6 plate so the studs form a backward letter C. Below that, place each of the two 2x4 tiles horizontally, one in front of the other. Add the second 4x6 plate so it also forms a backward letter C. Then add the 4x4 square plate, and a 2x4 tile horizontally. The surface is really coming along now. Let's get started on some craters!

20. Find four light gray 2x2 square plates and sixteen 2x2 quarter-circle tiles. Place the squares in the 4 square holes on your lunar surface near each corner. Using 4 quarter circle tiles, encircle each of the four 2x2 square plates you just placed.

21. Find two light gray 1x4 tiles, and three light gray 2x4 tiles. Reference the large smooth surface made by the 6x16 plate with a smooth center. Find the stud at the front right corner of the smooth surface. Count up 3 studs, and two studs to the right, this should be the stud used for the upper left-hand corner of a horizontal 2x4 tile. Add two more horizontal 2x4 tiles directly behind the tile you just placed. Orient the 1x4 tiles, vertically, and center them along the sides of these tiles. This is the base of a large moon crater!

22. Find three dark gray 2x2 round tiles with center holes. Reference the two horizontal 2x4 tiles near the middle of the right edge of the build. Find the two studs directly to the left of their center seam and place the first-round tile on it so that it's right column overhangs to the right onto the tiles. Next, reference the two vertical 2x4 tiles at the back middle of the assembly. Count 2 rows down from the center seam and place the second 2x2 round tile over these studs and the 2 directly in front of them. Last, reference the two horizontal 2x4 tiles near the middle of the left edge. Trace the row of studs at the bottom to where it ends at the large, smooth surface. This stud should be the upper left-hand corner of where you place the final round 2x2 tile.

Let's build the rest of the large moon crater.

23. Find four dark gray 2x2 quarter-pyramid pieces. Reference the moon crater base we built in step 21. Place one quarter-pyramid piece in each corner of the moon crater base, that's in the middle of your structure, made of the horizontal 2x4 tiles and the two vertical 1x4 tiles with the angles sloping outward.

24. Find four dark gray 1x2 slope bricks, and four dark gray 1x3 slope bricks. Alternate placing 1x3 and 1x2 slope bricks on the left and bottom of the crater.

25. Repeat step 24 for the right and top, to create all 4 sides of the crater's base.

Let's add some moon rocks now.

26. Find fourteen dark gray 1x1 sloped tiles. These are placed for decoration throughout the plate. At the right front corner of the build, go to your left horizontal 4x2 tile. Find its rightmost column, and put a 1x1 slope behind it, slope to the left, there should be a stud to the left of it. Put a 1x1 slope tile to the right, slope to the front. Repeat. Put a 1x1 slope to the right, slope to the right. Go to your front left circle, made of quarter-circle tiles. Go to the exposed half-stud at 1 O'clock to the right of the circle. Skip a stud to the half-stud's right and put a 1x1 slope tile there, slope to the left. Put another 1x1 slope tile to the right slope to the front. Find the horizontal seam between the horizontal 2x4 tiles on the left edge of your structure. Find the row of horizontal studs behind the seam. Skip two studs to the right from the left end of this row and put a 1x1 sloped tile on the third stud from the left, slope to the left. Put another one to the right, slope to the front. At the back left of your build, find the left 6x4 tile with smooth center that's placed like a letter U. Go to its right vertical column of studs. Skip two studs to the front from the back of this column and put a 1x1 sloped tile their slope to the left. Put another 1x1 slope tile to the front, slope to the front. Put another one to the left slope to the back. Go to the rightmost 6x4 tile with smooth center at the back, whose studs are shaped like a U, and find its leftmost vertical column. Skip two studs to the right from the left front stud of that column, and put a 1x1 sloped tile there, slope to the front. Find the rearmost 4x6 plate with smooth center that's on the right edge of your build, its studs form a C. Find its rear horizontal row of studs and go to the leftmost stud of that row. Put a 1x1 sloped tile in front of it, slope to the left, and put another 1x1 slope tile to the front, slope to the front.

27. Find four dark gray 4x1 quarter circle tiles. Place them around the surface of the large moon crater.

28. Find the black flag tile, a 4x2 tile with two clips on it, flagpole, and flag sticker which is labeled sticker 13, and has a picture of the American flag on it. Apply the flag sticker to the flag tile as best you can. Don't worry if it's upside down, as the flag tile can be reconnected in any direction. Connect the flag tile to the pole by clipping the smooth end of the pole into the small clips. Place the flag onto the single stud that's behind and to the left of the Apollo tile.

Your lunar surface is complete! Way to go!

Let's get ready to build the lander module.

This assembly uses pieces found in bag 2.

1. Find one dark gray 10x10 octagon plate with a center cutout. Orient it so that one of the sis in front of you, the piece should not be at an angle. Put it aside for a moment.

2. Find eight black pins with ball, eight dark gray 1x2 plates with ball on end, eight light gray 2x2 L shaped plates, eight light gray 1x1 round tiles, eight light gray 1x2 plates with bottom tube, four light gray 1x4 plates, four black 2x3 plates, and four dark gray 4x4 plates.

Heads up, you'll be repeating these steps to make 4 identical assemblies.

1. Flip one 4x4 plate over and put a 2x3 plate horizontally in the middle of the 4x4's left edge the 3x2's left column should be in the middle of the 4x4's left edge.

2. Flip it back over. Place one 1x4 plate vertically onto the second column of studs from the left. Then add one l-shaped plate in the back right corner so the back right stud of the 4x4 plate is free, like the braille letter H. Add another l-shaped plate at the front right corner of the 4x4 plate so the front right stud of the 4x4 plate is free, like the Braille letter F. You should now have something that resembles a sideways print letter T.

3. Place two 1x2 plates with bottom tube horizontally in the two right hand corners. The tubes will overhang to the right.

4. Snap the pins of the pins with ball, into the tubes at the right, so that the ball on the front tube is at the front, and repeat symmetrically at the back, so that the back tube's ball is to the back.

5. Orient two 1x2 plates with ball vertically and place them one knob to the left of the existing ball pieces, on the left studs of the 2x1 with tube. You should now have two balls at the top, and two at the bottom, slightly staggered.

6. Add a 1x1 round tile to the front and back studs of the two pieces you just placed.

7. Repeat 3 times to create 4 ball assemblies. Now we'll attach the ball assemblies to the octagonal plate. Take one of your assemblies and turn it so that the balls are at the front left and front right, with the lower step of 4x1 studs horizontally at the back. Put the back row of horizontal studs underneath the front row of your octagon and press the octagon down to connect it. Repeat symmetrically on the back, left, and right.

3. Find eight black 2x3 plates. Place them in pairs with their long sides together, vertically, creating a 3x4 shape with a seam down the middle, behind the left and right 1x1 round tiles on the front ball assembly. Repeat symmetrically at the back left and right.

4. Find eight light gray 2x2 L-shaped plates and four black 2x2 tiles with two studs. Place one of the 2x2 tiles in between the two 1x1 round tiles near the ball assemblies, so that the smooth half is to the front. Place two l-shaped plates so that one of their studs is behind the 1x1 round tiles. One l-shaped plate would be placed like the braille letter D behind the right 1x1 round tile, and the other l-shaped plate would be placed like the braille letter F behind the left 1x1 round tile, corner to the back right, and back left respectively. Repeat for the remaining three sides.

5. Find four peach 1x2-2x2 angled plates and attach them upright onto the studs of the 2x2 tile with two studs, with the 1x2 side facing the center of the octagon. At this point they look like little chairs facing the center of the octagon. For example, our front one will be attached horizontally on the two studs of the 2x2 tile with two studs, 2x2 upright studs to the front.

6. Find four light gray 1x4 plates. Place one directly behind each of the previous pieces, so that they span the 1x4 space created by the L-shaped plates from step 4. Example: On the left side, our 1x4 plate would be placed vertically to the right of the previous piece.

7. Find eight more peach 1x2-2x2 angled plates. Reference the currently placed ones. Place two more directly next to each of the existing 1x2-2x2s, making each 3 pieces long, each of these pieces will overhang by one stud, and that's fine.

8. Make a part: Find four black 1x2 plates with vertical clip-on long side and two peach 2x2 plates. Place two 1x2 clips horizontally onto the 2x2 with their long sides together, so that the clips are overhanging the outer edge, one overhangs to the front and the other overhangs to the back. Repeat to make 2 of these clip piece assemblies.

Orient the clip pieces so the clips point to the front and to the back. Place these on the left and right inner sides of the large octagon base. One of their columns will overhang the center hole, but that's fine.

9. Find two dark gray 1x2 plates and two peach 2x2 plates. Place each 1x2 plate in the middle of the vertical 1x4 gap in between the clip piece and the ball assembly. Then take the 2x2 plates and attach to cover that 1x2 and half of the clip piece. You should now have a horizontal 2x4 shape on the left and right sides, which end at the walls created by the angled 1x2-2x2 plates.

10. Find two white 2x3 bricks. Place them horizontally up against the walls on the left and right side, lined up over the 2x4 space.

11. Find two dark gray 1x2 plates and two light gray 1x2 bricks. Now reference the front and back ball assemblies. Place one 1x2 plate horizontally on the center angled 1x2x2 shapes our original "seat" shaped pieces. Place the 1x2 bricks on the large octagon base horizontally on the edge of the hole. For example, If we're placing a 1x2 brick we'll skip two rows to the back from the front 2x1 plate that's on our middle seat piece at the front, and then place it.

12. Find one light gray 2x8 plate. Span it vertically across the center hole and connect it to the bricks you just placed.

13. Find two blue 2x2 round plates and four 1x5 rounded plates with no center stud. Stack the two round plates and place them in the center of the 2x8. Align two 1x5 plates side by side vertically and span them from the 1x2 we just put on the seat shapes, to the 2x8. There should be one row of empty studs between the 1x5s and the round plates in the center.

14. Find eight light gray 1x2 bricks. Orient them on all 4 ball assemblies, with their short ends up against the walls created by the 1x2-2x2s. This means one on each side of both of the 1x5 groups, and both of the 2x3 bricks.

15. Find one light gray 2x14 plate. Span this horizontally from wall to wall, on top of the 2x3 bricks. Set this assembly aside for a moment.

16. Make a part: Find four light gray 1x1 plates with clips, four light gray 1x2 plates with round hinges on both short ends two light gray 2x2 plate with center hole and 2x2 side studs, two dark gray 1x2 plates, four black 1x2 tiles with one stud in the center, two black 1x2 plates with a bar on one long side, and two black 2x3 plates. Heads up! You will repeat the following steps once, to create two total assemblies.

A. Orient an 2x2 plate with center hole and 2x2 side studs so that the side studs are to the right.

B. Orient a 2x3 vertically and place it upright with its studs facing right, connecting it to the previous piece from the left---its studs point to the right. Place a 1x2 plate with bar on long side horizontally on the top row of the previous piece, bar to the top. Put a 1x2 plate with center stud vertically on the front column of the previous piece, and on the stud below it. Repeat on the rear column of the previous piece, and the stud below it.

C. Orient a 1x2 plate horizontally and place it underneath the previous piece to fill the gap.

D. Place two 1x1 plates with clips horizontally onto the 1x2, with the clips towards you and away from you respectively.

E. Clip one 1x2 with round hinges on each end to each clip, with the studs facing inwards.

Repeat these steps to create two hinge assemblies' total. Orient the two hinge assemblies so that they are like two chairs facing each other horizontally. Let's attach them to the main assembly that we just set aside. Place them in the center of the 2x14 bridge plate. The two chair-like assemblies should touch at the knee area. Gently pull the 1x2 plates with round hinges on the ends down, toward the base, and click the hinges into the clip piece assemblies from step 8. These should be aligned perfectly underneath the hinge assemblies.

17. Find four rounded light gray 1x2 plates. Connect two together, twice, to make 2 stacks of 2. Orient each stack vertically, and place on the third column of exposed studs on the 2x14 bridge plate when counting from the left, and right.

18. Find two dark gray 2x2 bricks with pins on two sides and connect them, aligning their pins horizontally.

19. Find four 2x2 round tiles, four 2x2 semi-spherical tiles, and eight 2x2 round bricks with holes in one side. Half of these pieces will be red and half will be white. If you can, sort them by color.

A. Start by stacking two white 2x2 round bricks with their holes aligned.

B. Add a white 2x2 round tile to the top of the cylinder and a 2x2 semi-spherical tile to the bottom of the cylinder.

C. Attach the cylinder to the 2x2 bricks with pins.

20. Repeat steps a through c for the red cylinder pieces. Make a duplicate of this exact assembly.

21. We will now attach the two red cylinders, and two white cylinders. On the front of the assembly, attach one red cylinder to the left of the 2x2 stacked bricks, and one white cylinder to the right of the 2x2 brick stack. On the back of the assembly attach one red cylinder to the right of the 2x2 stacked bricks, and one white cylinder to the left of the 2x2 brick stack.

Fun Fact: The Lunar Lander carried both fuel and an oxidizer to ignite the hypergolic fuels, since it is not possible to use fuel without an oxidizer in space.

The following steps make a small assembly that you are going to make two of.

22. Find two black 2x4 plates and stack them together. Orient the stack vertically.

23. Find one dark gray 4x6 plate and orient it horizontally. Place the 2x4 stack onto the right end of the 4x6 plate.

24. Find one light gray 1x4 plate and place it vertically to the left of the 2x4.

25. All the pieces used in this step are light gray. Find two 1x2 plates with a ball socket, and two 1x4 plates. Stack the two 1x4 plates together and place them vertically on the second column of studs from the left. Place the two 1x2 plates with ball socket skipping 1 column to the right from the previous piece, vertically, one with the socket to the front, and the other, to the back.

26. All of the pieces in this step are black. Find one 1x6 bridge-like trapezoidal piece, and one 2x6 bridge-like trapezoidal piece. Place the 2x6 trapezoid vertically with the feet pointing up on the 2x4 plate on the right. Place the 1x6 trapezoidal piece on the stack of 1x4s on the second column from the left.

27. Find one light gray 1x4 and one black 2x4 plate and align them vertically with the pieces from step 26, put the 2x4 plate vertically into the indent of the 2x4 trapezoidal piece, and the 1x4 plate vertically into the 1x4 trapezoidal piece.

28. Find two black 1x1 round plates with hollow stud, and two orange round 1x1 plates with a pin on top. Place the plates with holes under the plates with pin, and place each of these mini cylinders on the studs directly next to the sockets.

29. Find one light gray 1x2 plate with a hinge on the long side, and two black 1x5 rounded plates with only 4 studs. Place the 1x5s horizontally over the mini cylinders. Place the 1x2 vertically with the hinge to the right and place on the right edge, so the hinge overhangs to the right.

30. Find two dark gray 1x2 plates and one black 2x6 plate. Orient the 2x6 vertically and align it with the right-hand edge of the assembly. Orient the two 1x2s horizontally and place them on the 1x5 adjacent to the 2x6 plate, they should be connected by one stud, but that's OK.

31. Find one black 2x6 plate and place it vertically to the left of the 1x2 plates, it's left column overhangs to the left.

32. All the pieces in this step are black. Find two 2x3 tiles, and one 4x6 plate with a smooth center. Place the 4x6 plate at the front overhanging to the front with the smooth part to the back, studs shaped like the letter U. Align the two 2x3 tiles short end to end place them horizontally behind the previous piece filling in the remaining surface.

33. Find two dark gray ball topped stick pieces and insert them into the ball sockets.

34. Find two red 1x2 bricks with cross hole. Connect each brick using the cross shaped hole and the stick end of the previous pieces from step 33.

Repeat steps 22-34 to create another identical assembly.

Let's grab our octagonal assembly and attach these new ones to it.

35. Orient the two new assemblies standing up, so the studs are on the top, left and right, hinge to the top. Attach one in the front right hand corner gap, with the hinge to the top, using the upright studs on the edge and 2x1s with cross hole to secure it in place. Repeat symmetrically with the other piece at the back left.

Let's put this whole assembly aside for a moment.

The following steps make a small assembly that you are going to add to the main one. Some of these steps will be familiar, as they're similar to the previous assemblies' build.

36. Find two black 2x4 plates and stack them together. Orient the stack vertically.

37. Find one dark gray 4x6 plate and orient it horizontally. Place the 2x4 stack vertically onto the right end of the 4x6 plate.

38. Find one light gray 1x4 and place it vertically to the left of the 2x4 stack.

39. Find two light gray 1x2 plates with a ball socket and two light gray 1x4 plates. Stack the two 1x4 plates together and place them vertically on the second column of studs from the left. Place the two 1x2 plates with ball sockets end to end so that the sockets are apart and place them vertically on the fourth column from the left.

40. Find one black 1x6 bridge-like trapezoidal piece, and one black 2x6 bridge-like trapezoidal piece. Place the 2x6 trapezoid vertically with its ends pointing up on the 2x4 piece on the right. Place the 1x6 trapezoidal piece on the stack of 1x4 plates on the second column from the left.

41. Find two black 2x2 L shaped pieces and orient them so they resemble a backwards letter C shape. Place these on the 2x4 surface of the trapezoidal piece.

42. Find two black 1x1 round plates with hollow stud, and two round 1x1 plates with a top pin. Place the plates with hollow stud under the plates with top pin, and place each of these mini cylinders on the studs directly next to the sockets.

43. Find one light gray 1x2 plate with bottom tube and one black 4x6 plate with a smooth center. Orient the 4x6 plate horizontally, with the knobs positioned like an upside-down U studs at the back, left, and right. Attach the 1x2 plate with tube underneath the 4x6 plate, horizontally so the hole is flush with the bottom edge, in the right front corner, tube to the right.

44. Flip this assembly over and find another 1x2 plate with bottom tube it's light gray. Align it directly next to the existing tube. Turn the assembly 180dg, so that the tubes are now at the front left corner.

45. Find two black pins and one black sloped curved 2x2 tile with smooth bottom. Place one pin in each tube and place the stepped curved 2x2 tile to the right of the tubes, sloping to the right.

46. Find two dark gray 1x2 plates with one stud and a top tube. Snap them each onto a pin, so that both their studs are pointing up and to the right.

47. Now we'll build the spacecraft's camera. Find a white technic 1x1 hollow stud less cylinder, a white 1x1 brick with two adjacent side studs and the light gray 1x2 tile printed with a cassette/VHS tape/roll of film. Orient the 1x1 brick so that the one stud faces to the front and the other stud is to the right. Attach the 1x1 cylindrical piece sideways onto the front side stud of the 1x1 brick. Then attach the right side of the 1x2 tile onto the right-side stud of the 1x1. Flip this over so that the tube is facing back, and the top stud of the brick is lying on the table. Attach the "top" stud of the 1x1 brick on the front edge of the part, to the right of the 2x2 curved sloped tile.

48. Rotate this assembly 180 degrees around and 90 degrees so that it can stand up on the two 1x2s. Attach these two 1x2s onto the previous assembly's 1x6 trapezoidal piece so that the 4x6 stands upright vertically to the left. The tubes of the 1x2 plates with top tube will overhang to the left when you mount this part, but that's OK.

49. Find a light gray 1x2 with the hinge and place it vertically in the middle-right of the assembly onto the two L shaped plates so that the hinge protrudes right. Then find the two black 1x5 rounded plates with the x-shaped hole and place them each horizontally so that their x-shaped hole fits onto the round 1x1 plates with top pin.

Fun Fact: This assembly is known as "Quadrant 4" which houses the camera that filmed Neil Armstrong as he climbed down the ladder and put his foot on the moon.

50. Find a black 1x6 tile, a black 2x4 tile and a black 2x4 plate. Place the 1x6 tile vertically so that it covers the rightmost column of the assembly including the 1x2 plate with the hinge. Place the 2x4 tile horizontally at the front of the assembly so that it covers the 4 left studs of the 1x5 and a stud from each of the trapezoidal pieces. Place the 2x4 plate the same way at the back.

51. Find two black 2x3 tiles and place them over the previous piece horizontally so that one of them overlaps the 1x6 tile and the other overhangs part of the 1x2 plate with top tube.

52. Find two dark gray pins with ball joins and insert them each into the studs at the bottom of the assembly facing out.

53. Rotate the assembly so that it now lies on the 4x6 tile, with the 4x6 plate facing to the front and right. Find two white 1x2 bricks with x-shaped hole and slide them onto the two previous pieces and rotate them both about 45 degrees to the side as done with the other quadrants.

54. Attach this assembly onto the octagonal assembly as done with the other two in step 35, except this quadrant goes in the front left.

55-59. Repeat steps 22-26. Here they are:

55. Find two black 2x4 plates and stack them together. Orient the stack vertically.

56. Find one dark gray 4x6 plate and orient it horizontally. Place the 2x4 stack onto the right end of the 4x6 plate.

57. Find one light gray 1x4 plate and place it vertically to the left of the 2x4.

58. All the pieces in this step are light gray. Find two 1x2 plates with a ball socket, and two 1x4 plates. Stack the two 1x4 plates together and place them vertically on the second column of studs from the left. Place the two 1x2 plates with ball socket skipping one column to the right from the previous piece vertically, one with the socket to the front, and the other, with the socket to the back.

59. All the pieces in this step are black. Find one 1x6 bridge-like trapezoidal piece, and one 2x6 bridge-like trapezoidal piece. Place the 2x6 trapezoid vertically with the feet pointing up on the 2x4 piece on the right. Place the 1x6 trapezoidal piece vertically on the stack of 1x4 plates on the second column from the left.

60. Place a black 2x4 plate vertically into the 2x6 trapezoidal piece.

61. Find two black round 1x1 plates with holes, and two round 1x1 plates with top pin. Place the round plates with holes under the round plates with top pin, and place each of these mini cylinders on the studs directly next to the sockets. same as step 28.

62. Find the last black 4x6 with smooth center and orient it so that the studs form a U shape studs to the front, left, and right.

63. Find two light gray 1x2 plates with bottom tubes and place them under the 4x6 in the front middle so that their tubes line up in the front row.

64. Place a black 2x6 plate horizontally onto the front two rows of the 4x6.

65. Cover the previous piece with two 2x3 tiles horizontally.

66. Rotate the assembly 90 degrees clockwise, so that it is horizontal and can stand up on the last 3 pieces and the 1x2s with tubes face the front. Insert two black pins, each into the bottom tubes. Find the black 2x2 stepped curved tile and place it onto the 1x2s so that it connects the 2x1 plates to the 4x6 plate.

67. Find two dark grey 1x2s with top tube and slide them onto the pins so that they protrude to the front.

68. Add this assembly to the previous one, the two 1x2s standing on the 1x6 trapezoidal piece just like in the previous quadrant.

69. Find the last two black 1x5s and attach them onto the assembly horizontally so that their x-shaped holes slide onto the spokes. Then find the last gray 1x2 plate with the hinge and attach it at the front right vertically between the front right ends of the previous pieces so that the hinge is facing to the right.

70. Find the last 2x6 plate and add it vertically to the middle front right of the assembly so that it covers the right two studs of the previous two pieces. Find two 2x3 tiles and add them horizontally to the tops of the 1x5s so that they each hang over to the front and to the back respectively.

71. Make a part, the laser reflector: Find a white 1x2 tile, white 2x2 tile with 4 top studs and white 1x2 tile with panel. Decorate the 2x2 tile with 4 top studs with sticker number 5, which features a net/grid pattern. Place the 1x2 tile vertically onto the 2x2 tile's left column, and place the 1x2 with panel to the right, panel to the right and insert this 3-piece assembly into the gap in the middle of the previous assembly. It should just slide in without anything holding it in, to slide it in well, turn it upside-down so that the panel of the 1x2 panel piece's panel is at the left, pointing towards the table, and it should slide in at the right, with the panel sliding into the right of the two middle studs at the left of the assembly. It might take a little bit of tweaking to get the part in correctly, it should rest, not be attached to any studs. Fun Fact: This 3-piece assembly is the "laser reflector" which was one of the objects from the lunar lander placed on the moon. When a laser light was pointed at it from Earth, the distance to the moon could be measured.

72. Fold the hinged cover over to hold the "laser reflector" in. Then find the last two black 2x3 tiles and use them to cover up the 2x6 plate, placing them vertically.

73. Find the two remaining dark gray ball joint pins and insert them into the two ball joint sockets.

74. Rotate the assembly 90 degrees so that it stands up, with the "bottom" facing forward and to the right. Hinge each of the ball joint pins about 45 degrees so that the left one faces forward and the right one faces to the right. Slide a white 1x2 brick with an x-shaped hole onto each of them.

75. Use these 1x2s to connect this quadrant to the lunar lander the same way as the other three. The last quadrant should go in the back.

76. Rotate the lander so that the quadrant with the flap is now to the left. Decorate the front quadrant using the included stickers labeled 9, 8, and 14. Sticker 9 is a diagonally divided rectangle consisting of two triangles, which are black and gold. Number 8 is a rectangle 1/4 of which is black, and the rest is gold. Sticker 14 reads United States.

77. Rotate the lander 90 degrees so that the quadrant with the flap is in front. Find the black 2x2 flattened cone with one stud and place its bottom two onto the left bottom two studs of the 4x6 in the quadrant to the left.

78. Fold the flap in the front quadrant up so that it hides the "camera". Decorate this quadrant with stickers 9, 7, and 12. Sticker 7 features the American flag on it, 9 is a rectangle, 1/4 of which is black, the rest is gold, and 12 is a large panel with a rectangle whose corner is black and the rest of which is gold.

79. Find the last four light gray 2x4 plates and use them to connect the tops of the eight 1x2 bricks that hold the quadrants on.

Bag 2 is done! Great work!

Open Bag 3.

80. Find 4 tan 1x2 plates, 8 light gray 1x2 upwards sloped bricks, with two studs on top and 4 black 1x6 plates. Place each of the 1x6 plates with their middle onto the outside 4 studs of each of the previous 4x2 plates, with their ends hanging off. Place the 1x2 sloped bricks on the outer inside studs of the 2x4 plates facing to the inside and place the 2x1 plates horizontally between the slope bricks, on the inside studs of the 4x2 plates.

81. Find eight light gray 1x1 plates with a side stud and place them each onto each of the end studs of a row in front of the slope bricks. Example: when placing two on the front side of our build, one goes one stud to the front and to the left of our front left slope brick, and the other one goes one studs to the front and to the right of our right front slope brick.

82. Find eight black 1x3 and 8 black 2x3 plates. Place each 1x3 plate vertically onto each one's top end mounts onto one of the previous piece with their bottom studs connecting to the structure. Their studs should face outward. Then place each 2x3 vertically, its top row mounting to a vertical 1x3's second stud, mounted vertically studs pointing towards you.

83. Find eight gold 1x1 sloped tiles, eight gold 1x1 tiles and thirty-two gold 1x2 tiles. Place each 1x1 sloped tile one stud under each of the 1x3 sloping to the bottom. Then place each 1x1 tile onto the top stud of each of the 1x3s. Then use the rest of the 1x2 tiles and place them horizontally to cover up all the studs of the pieces placed in the previous step.

Fun Fact: The foil on the Lunar Lander was used for thermal and micrometeoroid protection.

84. Find a tan 2x2 plate and a black 1x2 plate with top tube. Place the 2x2 plate onto the 1x2 so that the 1x2 is facing front and is under the front right stud of the 2x2.

85. Find another black 1x2 plate with top tube and place it to the left of the previous piece the same way.

86. Find two technic pins with a stud and insert them each into a tube.

87. Make a part: Find a two-stud-long red technic axle, a dark gray technic axle with a pin hole at the end, a black two-stud-long technic axle extender, which feels like a ribbed tube, a half deep pin hole with an axle hole the half-deep pin-hole looks like a thin ring attached to a fat axle-receiver. on the side, and a three long technic pin with a pin hole in the middle. Insert the two long axle into the axle hole of the pinhole with the axle hole, make sure that the pinhole is standing upright, hold to the back. Slide the two long axle extender onto the two long axle from the right. Insert the one long axle with the pinhole at the end into the axle extender, parallel to the pinhole of the first piece. Insert the three long technic pin with the pinhole in the middle into the previous piece from the front with the pinhole pointing to the left and to the right. Connect this five-piece assembly's first piece to the right pin of the first assembly. Make sure that the last piece of the second assembly is still pointing to the left.

88. Repeat step 87 but without the three long technic pin with the pinhole in the middle and attach it to the other side of the assembly, securing it and making it rectangular shaped. The technic pieces should be able to flap around.

89. Repeat steps 84-88 three more times. Then place these four assemblies each onto the 1x6s of the lander so that the tan 2x2 plates lie between the 1x2 bricks from step 80, the technic rectangles should be pointing outwards.

90. Find eight black 1x2 plates, eight gold 1x1 tiles, four gold 1x2 tiles, and eight gold 2x2 cut-off corner tiles. Place a gold 1x1 tile on a 1x2 plate, and a corner tile with a cut-off corner facing left, cut-off corner to the back left, on the other stud, and repeat this with the corner, cut-off corner facing back right. Make both these assemblies 4 times each. Use these eight assemblies to cover up the outer stud of the sloped pieces from step 80 with the corner pieces. The corner pieces should also align with the quadrants. The 1x2 plate should connect to the stud from the 1x1 plate with the side stud underneath it. Then place the 1x2 tiles between the corner pieces over the 2x2 plates.

91. Place the large dark gray octagonal plate with square hole in the middle, in the middle of the assembly. It's very satisfying!

92. Find two light gray 1x1 plates with a top clip, and four black 1x1 round plates. Turn the lander 45 degrees clockwise and place the 1x1 plates with the clip on the last piece at the very front, one stud to the back of the C shape of tiles made in step 90. These two pieces should have a 2-stud gap between them and their clip should be going vertically. Place a black 1x1 round plate two studs to the back and two studs to the outside of each of the 1x1 plates with the clip, one should be two studs to the back and two studs from the left from the left 1x1 plate with clip, and the other should be symmetrically at the right, two studs to the back and two studs to the right of the right 1x1 plate with clip. Then place two more 1x1 round plates, each 5 studs back from the first two, the four of them making a rectangle.

93. Now we'll start making the lander's legs. Make a part: Find a dark gray technic pinhole with three ball joints on the sides and insert a three-stud-long blue technic pin into the pinhole. Orient this so that the pin goes left to right and the ball joints point to the back, front, and bottom.

94. Find a silver two-stud-long technic pin extender it's a smooth round cylinder. and attach it to the left side of the pin. Then insert a two long black technic pin into the pin extender.

95. Slide another sliver two-stud-long pin extender onto the previous piece, it should still be pointing to the left. Insert another two-stud-long black technic pin into the last piece.

96. Slide a dark gray 1x1 technic pin bush onto the last pin from the previous step.

97. Find another dark gray technic pinhole with three ball joints and insert a one-stud-long technic pin with a stud into the left side of it the same way as done in step 93. Then insert the long thin gold piece from the left side into the previous two pieces so that it goes through, up until the ring. Connect this three-piece assembly into the last assembly, by inserting the last piece into all the pin extenders, holding everything together. The pinholes with ball joints should still be facing the same way.

98. Find the small gold piece with the hinge on one side and insert it onto the end of the last piece from the left.

99. Find two black ball joint connecter pieces and attach them each onto the right ball joint piece, one on the top ball and one on the bottom ball. They should snap on.

100. Find a gold radar dish piece, a black 1x1 round plate and a wrench shaped piece. Place the radar dish upside down and place the 1x1 stud down into the radar dish. Then insert the wrench piece into the previous two pieces, with just the wide end sticking out. Then connect the last two assemblies together using the wrench piece and the hinged piece on the very left of the previous assembly. Repeat steps 93-100 twice more to make 3 "landing gear legs".

101. Attach these three "legs" onto the lander using the ends with the blue pins and the pinholes on the ends of the "flaps" of the lander. Attach a "leg" on the back, right, and left. The ball joint connectors should be hanging down as the "legs" are facing out.

102. Repeat step 93.

103. Slide a silver two-stud-long long technic pin extender onto the right end of the blue three long pin.

104. Find two two-stud-long black technic pins, a 2x2 plate with two pinholes under it and a 2x2 tile. Insert each pin into the pinholes of the 2x2 plate with pinholes. Place the tile on the plate. Use sticker 6 to decorate this tile-- it features a computer screen showing a world map and a computer keyboard. Connect this to the pin extender of the previous assembly via one of the pins.

105. Slide a dark gray technic pin bushing onto the other pin from the previous step.

106-109. Repeat steps 97-100. The only difference between this leg and the other three is that this leg has a 2x2 "screen" instead of one of the two long pin extenders. The remaining steps of making this "leg" are the same as the steps to making the other "legs".

110. Attach this "leg" to the front of the lander, same way as the other three. Secure the ends of the ball joint connected to the ball joints at the bottom of the lander. Notice how each side has two pairs of ball joints, make sure to use the ones closer to the inside for this step.

111. Use the last eight ball joint connectors to connect the ball joints on the "legs" to the ball joints at the bottom of the lander. The "legs" should be able to mostly stay in place, secured by the ball joint connectors. These connectors should connect from the connectors at the outside of the bottom of the lander, to the ball joints above the radar dishes. You have now completed the lander's landing gear!

112. Find the two black ladder pieces and the light gray four-stud-long bar. Connect the bar to one of the ladder pieces using the clips on the ladder. Secure the second ladder to the bottom of the first. Connect the bar to the clips at the top of the assembly, they're the 1x1 plates with top clip made in step 92.

113. Now flip the lander upside-down. Find the 2x2 light gray round brick with a raised vertical ridges and place it on the 2x2 round plate with upward-facing bars. Slide a light gray technic bushing onto each of the bars. Place the octagonal 2x2 plate on the 2x2 brick. Place the dark gray bucket shaped piece on the previous piece. Slide a four long axle with a stopper all the way through all of the 2x2s, top to bottom. Use the end of this axle to secure this under the lander, it should be able to go right in the middle.

114. Flip the lander back over again to its upright position. Find four black 1x3 plates with two studs place them horizontally on the table and place a black 1x2 plate with a square hinge horizontally onto each of them. Make four of these. Attach each of these to the lander by connecting the hinge to one of the four hinges on top of the lander, facing up. Make sure that these assemblies are pointing out, i.e. push them up so that their studs point inwards. Once you have all of them in place, fold them all up by one click, so that their studs are diagonal.

115. Place the lander onto the base, so that the landing gear radar dishes stand up on the circles of the base, to keep everything in place.

Bag 3 complete!

Open Bag 4.

Assemble the second astronaut minifigure. Connect the white legs to the white torso. The white space suit he is wearing has the NASA logo, and some pockets. Connect the yellow head. Now connect the gold helmet and life support backpack He is ready for the moon!

116. Find a light gray 2x2 plate with two side studs and face it forward, side studs to the front.

117. Place two dark gray 2x2 tiles each onto one of the back studs of the previous piece, facing back and out.

118. Find two more of the same 2x2 plate with side studs, and place one directly to the right of the first, and one directly to the left.

119. Find three more of the same 2x2 plate with side studs and place them under the back studs of the 2x2 tiles, facing back, making a symmetrical rectangle.

120. Find two dark gray 1x2 grilled tiles and place them vertically, one directly to the left of the 2x2 tiles and one directly to the right.

121. Find two light gray 1x6 plates, and place them horizontally on the side studs, one at the front and one at the back.

122. Flip this assembly upside down. Find a dark gray 4x4 round plate and place it under all the 2x2 plates with side studs, in the middle of the assembly. Find a black 2x2 semispherical plate and place it under and in the middle of the previous piece.

123. Find two light gray 2x6 plates and hold them horizontally, upright, studs towards you. Put a light gray 6x1 arch brick from the back on their top row. Do this for both of the 6x2 plates. Use their bottom row to connect these two pieces to the 1x6 with side studs from the previous assembly, with the arch bricks going around the 4x4 round piece.

124. Heads up: you will be repeating steps 124-140 twice to make two total assemblies. Lay two light gray 1x6 plates horizontally next to each other, long side to long side, forming a 2x6 rectangle.

125. Place two light gray 1x2 plates onto the ends of the 1x6s to hold them together. Orient this part, so that this rectangle is vertical. Place two light gray 1x4 plates, horizontally one row to the front of, and behind, respectively, of the 2x1 plates, with two studs overhanging to the left. There should be two rows of studs between the 1x4 plates.

126. Find a black 2x8 plate and insert it horizontally into the 2-stud gap, with its four rightmost columns protruding to the right, and with its leftmost edge flush with the 1x4s.

127. Flip this assembly over so that the 2x8 still protrudes to the right. Find a light gray 1x4 plate and place it directly to the left of the left 1x6 plate. Find three 2x2 tiles with studs. Place one of them on the right end of the 2x8 plate, Place the other two to the left of the previous piece, with one overhanging to the back, and one overhanging to the front.

128. Decorate the previous three pieces with stickers 2, 3, and 4. Sticker 2 features a control panel with two knobs, and other buttons, sticker 3 features a control panel with knobs, and sticker 4 features a control panel with many little buttons and 4 knobs. The buttons differ in size and shape.

129. Flip the assembly right-side-up. Find two yellow 1x2 plates with clips on the long sides. Attach them onto the two previous pieces so that the clips face outwards.

130. Make a separate part: Find a light gray 1x6 plate, 2x6 plate, two 1x2 plates with a beam going upwards, a 1x2 plate with a sloped end, three 2x2 plates and four 1x4 plates. Place a 1x2 with the beam on the front right stud of the 2x2 its right stud overhanging to the right, with the beam facing back. Place the other 1x2 plate with beam the same way, on the front left stud overhanging to the left with the beam to the back and up. Place two 1x4 plates vertically so that each of their second studs from the back is under each of the 1x2s overhanging studs, so that each 1x4 has two studs protruding to the front and one stud under the beam. Place two 2x2s, each onto the two studs protruding to the front of the 1x4s, with one column overhanging, left column overhanging to the left, and the other 2x2 plate's right column overhanging to the right. Remember that there is still a 2-stud gap between the 1x4 plates and the 2x2 plates. Place two 1x4 plates, each under the two studs overhanging the last two pieces, flush the other 1x4 plates. The four 1x4 plates and the 2x2 plate should line up in the back. Place two 1x2 plates with the sloped end each onto the back two studs of the previous two pieces, sloping to the back. Place the 2x6 plate horizontally in front of the two sloped ends, and a 1x6 plate directly in front of that 2x6 horizontally. Connect this assembly to the end of the 2x8 from the previous assembly. The bottom of everything lining up.

131. Place a black 2x4 plate vertically, directly to the left of the assembly you just mounted, covering up the two 1x2 yellow plates with clips. Place a light gray 2x6 plate vertically directly to the left of the 2x4, and a light gray 2x2 directly to the left of that.

132. Find two black 1x2 plates with side studs hanging over the side, and place them horizontally, one directly to the front of the last 2x2, side studs overhanging to the front and one directly to the back of the previous 2x2 side studs overhanging to the back.

133. Find three black 2x4 plates and two black 2x2 tiles. Place the two 2x2 tiles at the very right of the assembly, each just to the left of each upwards-facing beam. Place a 2x4 plate vertically, directly to the left of them, and another vertically directly to the left of that, and the last one vertically to the left of that.

134. Place a light gray 1x8 tile horizontally, directly to the front of the previous five pieces, and one horizontally behind the previous five pieces. Place a light gray 1x4 plate vertically, directly to the left of the last 2x4.

135. Place a light gray 4x4 sloped piece that is 2 studs wide at the end horizontally at the right end of your part, over the 2x2 tiles and the first 2x4 plate from step 133, sloping down to the right. Place two light gray 1x2 plates with a sloped end to the left of the previous piece, both vertically, with their sloped ends sloping to the front and back respectively, flush with the previous piece. Find two black hand shaped clipped pieces. Slide them onto the two upward-facing beams at the right, with the clips facing up and to the right.

136. Snap a three long black bar horizontally onto the two clips from the previous step. Place a light gray 1x2 plate vertically into the gap between the sloped ends of the 1x2s from the previous step. Place two black 1x1 round plates, one on each of the studs of the previous piece.

137. Place a light gray 1x2 brick vertically directly to the left of the previous piece. Place a light gray 2x2 cut-off corner brick to the front of the previous piece, facing to the left, cut-off corner to the front right with part of it over the 1x8 tile. Do the same at the back, place a 2x2 corner brick behind the 1x2 brick with part of it over the 1x8 tile facing to the left cut-off corner to the back right.

138. Take four red 2x2 round plates and stack them into two stacks, each two plates tall. Place these two stacks next to each other vertically into the gap inside the previous three pieces, covering the last 2x4 plate from step 133.

139. Place a light gray 1x2 brick vertically to the left of the two stacks, onto the leftmost column of the assembly. Use two more light gray corner bricks to fully surround the two red cylindrical stacks. Cover the two red cylinders with a vertical black 2x4 plate to fully fill in the gap.

140. Find a light gray 2x2 plate with two side studs and orient it so that the side studs are facing to the left. Find two white 2x2 corner plates, and place them onto the previous piece, going around the upper layer of the 2x2, making a 2x4 surface on top. Find four black 1x1 plates with a side stud and place them under the parts of the white pieces that are hanging over, so that the side studs face to the front and to the back. Find a dark gray 2x2 tile and place it onto the front four studs of the 2x4 surface mentioned before. Then place two dark gray 1x2 plates with one stud vertically, next to each other, behind the previous piece. Make a part: Put a black 1x2 plate with a clip on the side so that the clip faces left. Place two black 1x1 plates with a side stud on the side, one on the front of the previous piece and one on the back, with the side studs facing front and back. Cover these three pieces with a light gray 1x4 plate. Connect this assembly to the previous assembly's side studs on its left, with the clip facing down. Orient the previous assembly vertically, so that its "bottom" is facing to the right, and most of the sloped pieces are sloping up. Connect this assembly's last piece, the light gray 1x4 plate, to the other light gray 1x4 plate on the other assembly's right side, on the second row from the bottom, both horizontal.

Repeat steps 124-140 to make another such assembly.

141. Use the other assembly, the one with the round hole in the top, to connect the two large, sloped assemblies by connecting their top two rows to the side studs, orienting the assembly in the middle horizontally, with the circular hole still facing up, making a nearly symmetrical figure.

142. Use two black 2x8 plates horizontally, one on the front and one on the back, to connect all the individual side studs at the bottom of the assembly. Then use four light gray 1x8 tiles horizontally to cover up all the studs of the previous two pieces. The figure should now be secure, and shaped like a big O.

143. Insert a black wrench shaped piece with a clip into a dark gray piece with four bars going in different directions. Use the clip to clip this onto the black horizontal bar on the top left of the assembly. Do the same again but instead of using a dark gray piece with bars going in different directions, use a silver radar dish piece, and clip it onto the horizontal bar on the top right.

144. Make a part: Place two light gray 3x1 upside down tiles under a light gray 1x6 plate. Place this stack vertically inside the O shape, on the left, flush with the front surface. Repeat this step again, but this time place it on the front right.

145. Make a part: Find a light gray 2x2 plate. Then find four light gray 1x2 plates with a sloped end. Place the four light gray sloped end 1x2 plates under the 2x2, so that two of the sloped ends point to the right, and the other two, to the left. Then cover the 2x2 with a black 2x2 tile. Place this assembly vertically onto the right of the capsule assembly, in the middle and perpendicular to the Side-studded black 2x4, with the slopes going up and down, with the downward-facing slopes aligned with the bottom of the assembly.

146. Find four light gray sloped pyramidal bricks, and place two to the front and two to the back of the previous piece, flush with the octagonal shape underneath it.

147. Rotate the assembly 180 degrees, so that you can repeat step 145, but on the other side of the capsule. In this step though, before you place the six-piece assembly vertically onto the capsule, place two black 2x4 plates horizontally under it first, flush.

148. Repeat step 146, but place two light gray 2x2 corner triangular plates under each corner brick, elevating everything by two plates, everything flush just like on the other side, but two plates more out.

149. Turn the capsule upside-down so that the clips are at the left and right. Make a part: Find a black cone brick with a 4x4 bottom and 2x2 at the top. Place a black 2x4 plate horizontally onto it with two studs overhanging on each side. Place this assembly vertically upside down onto the middle of the capsule, the wide end of the cone pointing up. Then set this assembly aside.

150. Find a large light gray 2x8 U shaped brick.

151. Place two light gray 2x2 upside down tiles under the U-shaped brick, covering the tubed underside of the brick, making it smooth.

152. Make a part: Find a black 2x4 plate and orient it horizontally. Place a light gray 2x2 plate onto the 2x4s middle four studs. Then place two light gray 2x2 triangular corner plates, one onto the left end and one onto the right end of the 2x4, forming an edge with six studs at the front, and four at the back. Flip this over 180dg, so that the bottom is facing up and the side with four studs is at the front. Place a light gray 1x2 plate with a ball socket horizontally under the front middle two studs of the black 2x4, socket to the front. Then place a light gray 1x2 plate horizontally, directly behind the previous piece. Find two black slope curved 2x2 tiles and place them over the previous two pieces, one sloping to the right and one to the left. Then flip it back over, except with the socket pointing back now. Place two light gray 1x1 rounded tiles onto the outside back studs of the assembly, with the straight edges pointing to the front and middle, rounded parts to the back left and back right respectively. Then place the large 2x6 clear windshield piece over the front six studs of the assembly horizontally, windshield slope to the back, overhanging to the front. Then use the front studs of the windshield piece to connect the two assemblies by placing the back studs of the U-shaped piece from the assembly with the U shaped piece under the front studs of the windshield piece.

153. Make a part: Find a light gray 1x2 brick and put it horizontally on the table. Place two black 1x1 bricks with side studs onto the brick, so that their side studs pointing to the front and to the sides. Place two light gray 1x2 plates, upright, each onto one of the outer side studs of the 1x1s, going down. Place a light gray 1x2 plate with middle stud horizontally over the two front side studs. Then place two sloped light gray 1x2 grilled tiles, each onto the two vertical side 1x2 plates, each sloping down. Place this assembly onto the back two studs of the previous assembly so that the plate with middle stud is facing back, and the grilled pieces facing to the left and right, laid over the 1x1 rounded tiles.

154. Place two light gray 1x2 bricks vertically, each to the side of the windshield piece, onto the sides of the U-shaped brick, flush with it.

155. Make a part: Find a light gray 1x2 brick and orient it horizontally. Place two black 1x1 plates with side studs going up and in front of them under the 1x2, with the side studs going to the front. Place a black 1x2 plate with two side studs horizontally onto the 1x2, with the side studs going to the front. There should now be a 2x2 surface of studs at the front of this part. Place a dark gray 2x2 tile over the four side studs. Decorate this tile with sticker 1-- it shows a control panel with dials/indicators on it. Place this assembly onto the front middle two studs of the previous assembly, right in front of the windshield with the tile facing to the front.

156. Place a light gray 1x6 plate horizontally, over the previous assembly forming a 2x8 surface on the top of the assembly.

157. Place two light gray 1x2 bricks with a hinge on the side, each horizontally, on the back row, of the 2x8 surface, on the left and right end respectively, with their hinges pointing outward. Then find two light gray 1x1 bricks with a bar on the side and insert the bar into two black 1x1 round plates, one on the top and one on the bottom. The 1x1 round plates should slide on if you insert them on the stud first. Place each 1x1 brick one stud to the front of each of the 1x2s outer stud, with their bars facing forward.

158. Place a black 1x4 frame that is three bricks tall horizontally between the 1x2 bricks with the joints. Place two light gray 1x1 bricks, one to the right and one to the left of the frame, each on one of the 1x2s. Place two light gray 1x2 bricks, vertically, to the outside of the previous two pieces, and covering everything from the previous layer. Make a part: Find a light gray 2x6 plate and two light gray 1x2 plates. Put the 2x6 plate horizontally on the table and place the 1x2 plates vertically each onto the horizontal 2x6's rightmost and leftmost columns. Find two light gray 1x2 sloped bricks that are each two bricks tall. Place them each onto the previous two previous pieces sloping back. Place this 2x6 assembly centered onto the back two studs of the previous assembly, with the 1x2 sloped bricks right behind the 1x1 bricks.

160. Find a 3-brick-tall 1x4 black frame, and insert two dark gray doors into it, closed. Place this frame right to the front of the other frame, with the doors facing to the front.

161. Find two black 1x1 plates with a side stud going to the front and up in front of it, and two black and yellow lever pieces. Place each lever onto one of the side studs. Place the 1x1s to the sides of the back frame, one to the left and one to the right, each plate on a 1x1 brick from the previous layer, levers to the front. Place a black 1x1 round plate onto each of the previous 1x1 plates.

162. Find two light gray 1x2 plates with a sloped end. Place them vertically onto each of the previous pieces, with their front studs on the previous pieces and with their back stud, the one with the sloped end, placed over the sloped 1x2 brick, sloping to the back.

163. Find a large 2x8 U shaped brick, different from the one in step 150, and place it horizontally over the frames, 1x2 plates, 1x1 round pieces and 1x2 bricks, making the top of this assembly smooth and round.

164. Make a part: Find a dark gray 1x2 plate with three cones facing out of it in opposite directions. Orient it so that the cones are facing to the front, to the left and to the back. Place a dark gray 1x2 plate with a square hinge instead of one of the studs horizontally onto the 1x2 with cones, with the hinge to the right. Connect a black hinge limb onto the previous piece's hinge and bend it so that it goes upwards. Find a dark gray 1x1 cone and place it under the 1x2 with cones' left stud. Make two of these assemblies and connect them to the capsule by snapping the hinged limb onto the hinges on the left and right of the capsule. The cones should face to the back, right, up and down. Rotate the capsule so that the doors are facing to the back and bend the limbs to the front at about 45 degrees.

165. Rotate the assembly 180 degrees so that the top is now at the bottom. Find a silver radar dish piece and a dark gray ball joint pin and insert the pin into the outer side of the radar dish. Connect the radar dish to the assembly using the ball joint pin and the ball joint socket at the front top of the assembly. Point the dish up. You have now completed the reaction control system, or RCS.

166. Attach the RCS and the capsule by connecting the 1x1 bricks with bars with the 1x1 round plates to the yellow 2x1 plates with clips on the front of the capsule.

Fun Fact: The reaction control system (RCS) provides thrust to a spacecraft, allowing it to be steered in the right direction. This system was used by the Apollo Lunar Lander when descending to the Moon.

167. Set the capsule aside. Make a part: Place two 3x2 under sloped bricks onto the right four studs of a black 2x4 plate oriented horizontally with their two sloped rows overhanging to the right, one right next to the other.

168. Place a light gray 2x4 brick vertically to the left of the two previous pieces, its left column overhanging to the left. Then place another black 2x4 plate under the previous 2x4 brick vertically, with its left column protruding to the left.

169. Take two more light gray 2x3 under sloped bricks and place them right next to each other on the left column of the previous 2x4 plate, with their two left columns that have a sloped underside sloping to the left.

170. Place a light gray 2x4 brick vertically over the previous two piece's leftmost columns. Do the same on the other side with another 2x4. Place a light gray 1x4 brick horizontally in the gap between the 2x4s on the front row. Place another one the same way in the gaps back row.

171. Place two light gray 1x6 bricks horizontally in the middle of the front and back row of the next layer, each onto one of the 1x4s from the previous step. Place two light gray 1x2 bricks, vertically to the left and to the right of the back 1x6 brick. Place two light gray 1x2 bricks with hinges on their sides horizontally to the front of the previous pieces and into the middle, with their hinges pointing out, and their inside studs to the center of the front 1x6. Place two light gray 1x1 bricks with bars in front of them each to the front of the previous piece's outer studs, completing the outside of the layer. Slide a total of four black round 1x1 plates onto the bars, two each, similar to step 157.

172. Place a light gray 2x4 brick vertically over the previous two piece's leftmost columns. Do the same on the other side with another 2x4. Place a tan 1x4 brick with side studs horizontally in the gap between the 2x4s on the front row. Place another one the same way in the gaps back row.

173. Place two light gray 3x4 sloped bricks vertically onto the sides of the layer, with the one on the left pointing to the left and with the one on the right pointing to the right, with their three sides flush with the front back and sides. Then place a light gray 2x4 brick vertically between the two previous pieces, completing the layer, flush with the front and back.

174. 5 Steps to go! Cover the 4x4 surface of studs at the top of the assembly using a black 2x4 plate placed horizontally in the front and two black 2x2 tiles placed next to each other in the back.

175. Make a part: Find a light gray 2x2 plate. Place a light gray 1x2 plate onto the 2x2's two left studs. Then place a light gray 1x2 plate with a ball socket directly to the right of the other 1x2, socket pointing to the right. Then cover the two 1x2s with a black 2x2 tile. Clip a dark gray ball pin into the ball joint socket and slide a round piece with 4 bars sticking out of it shaped piece onto it. Angle the pin so that the 4-bar piece points up. Then connect this mini assembly onto the middle four studs of the 2x4 from the other assembly, with the 4 bars pointing up and back.

176. Place two light gray 2x4 tiles vertically onto the four side studs at the front of the assembly. Place each of them by hanging them down from their top two studs. Then decorate these two tiles with stickers 10 and 11, 11 goes on the right and 10 goes on the left. The stickers illustrate control panels that can be opened and handles and connectors.

177. Repeat step 164, except bend the limbs towards the back.

178. Connect this assembly to the back of the capsule the same way you connected the RCS.

179. Connect the capsule to the lander using the clips at the bottom of the capsule and the hinge pieces in the hole in the lander. You're done!

Thank you so much for building this set!

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