

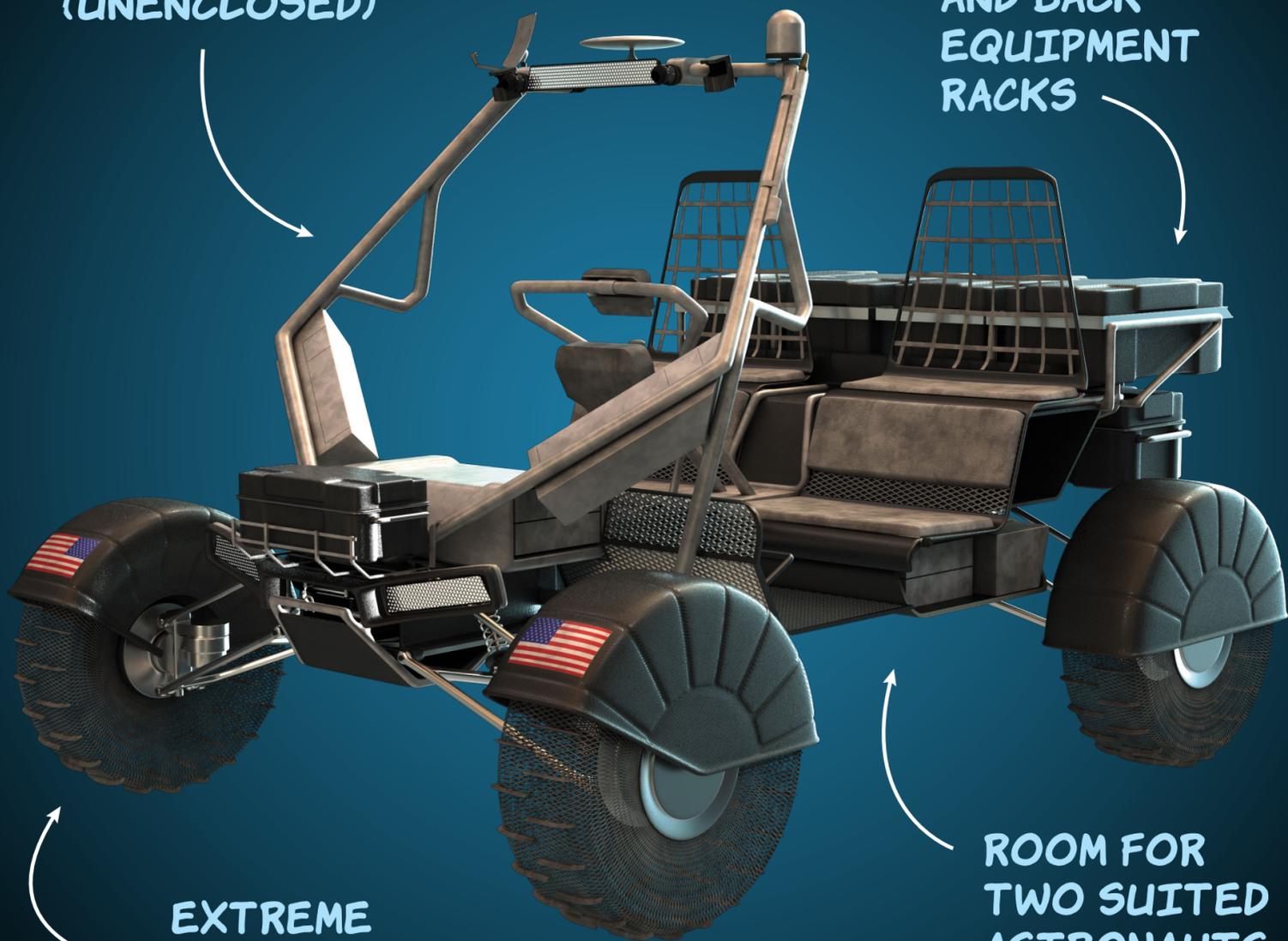
HOW TO DRAW

ARTS & CRAFTS

NASA'S LUNAR TERRAIN VEHICLE (LTV)

UNPRESSURIZED
(UNENCLOSED)

FRONT
AND BACK
EQUIPMENT
RACKS



EXTREME
ENVIRONMENT
TIRES

ROOM FOR
TWO SUITED
ASTRONAUTS

National Aeronautics and
Space Administration



LTV shown is based on conceptual design.

WE ARE GOING!

WITH THE ARTEMIS PROGRAM, NASA WILL LAND THE FIRST WOMAN AND NEXT MAN ON THE MOON BY 2024, USING INNOVATIVE TECHNOLOGIES TO EXPLORE MORE OF THE LUNAR SURFACE THAN EVER BEFORE.

LEARN MORE: [NASA.GOV/ARTEMIS](https://www.nasa.gov/artemis)



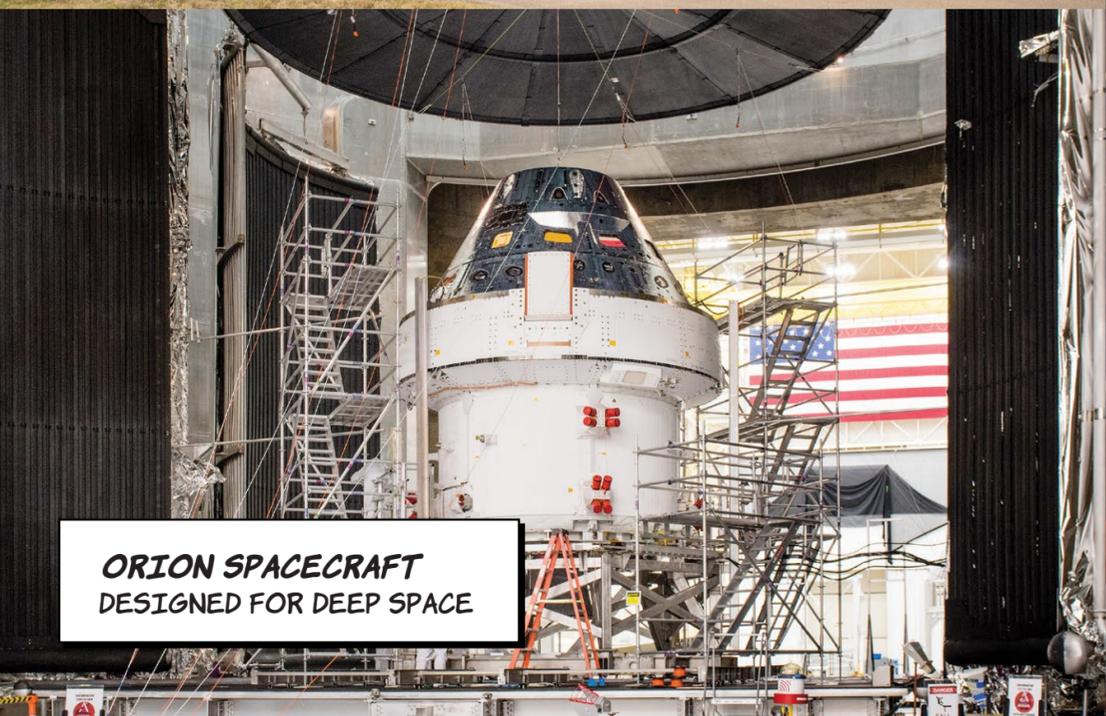
THE SPACE LAUNCH SYSTEM
WORLD'S MOST POWERFUL ROCKET



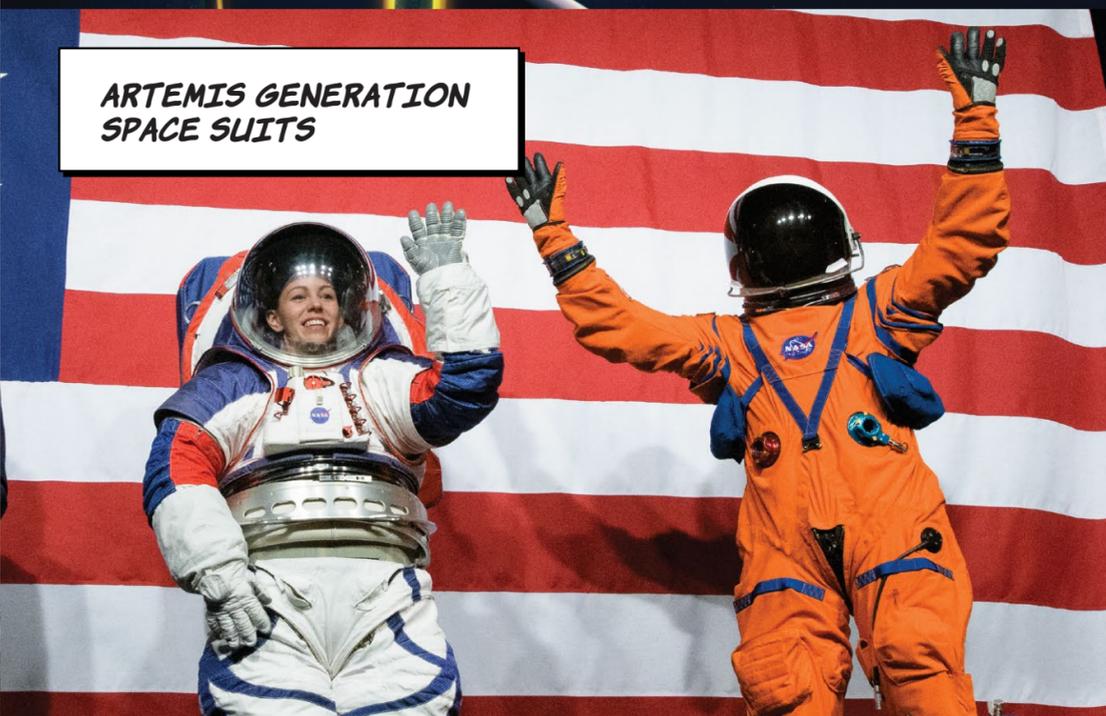
THE GATEWAY
OUTPOST ORBITING THE MOON



ORION SPACECRAFT
DESIGNED FOR DEEP SPACE



ARTEMIS GENERATION
SPACE SUITS



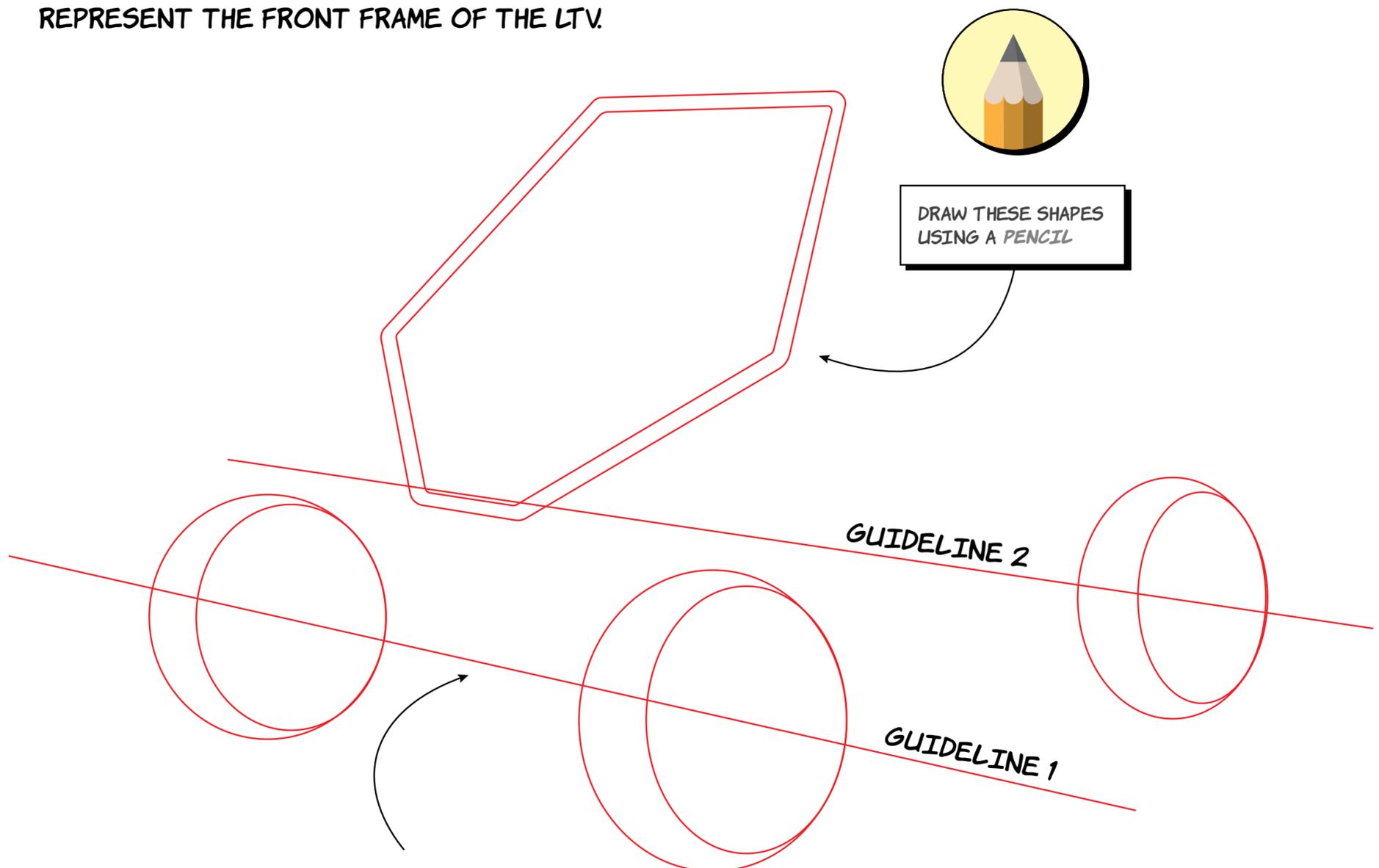
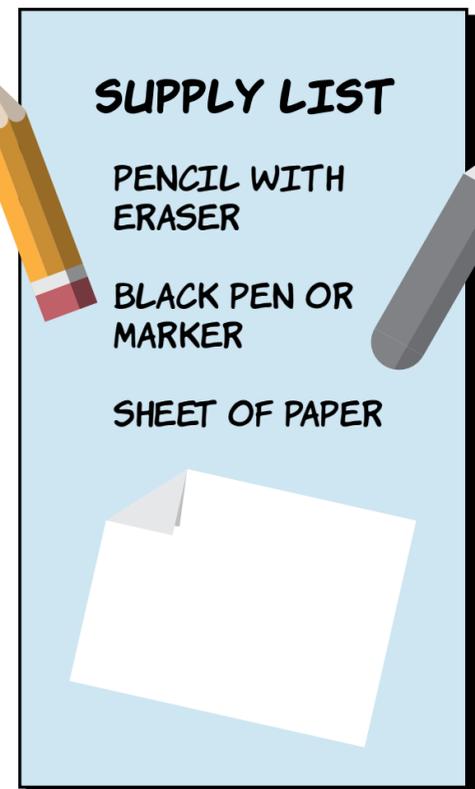
1. LET'S DRAW THE LTV!

THIS ACTIVITY REQUIRES A *PENCIL* AND A *BLACK PEN* OR A *MARKER*. YOU WILL USE THE PENCIL TO DRAW THE GUIDELINES AND THE MARKER TO DRAW THE FINAL SHAPES. FOR EVERY STEP, THE CURRENT SHAPES TO BE DRAWN ARE SHOWN IN *RED*.

THE LTV CAN BE DRAWN USING A VARIETY OF BASIC SHAPES. USING THE PENCIL, DRAW AN ANGLED GUIDELINE (1) THAT WILL BE USED TO ALIGN THE LTV'S FRONT TIRES. ABOVE THAT, DRAW AN ADDITIONAL GUIDELINE (2) AT A SLIGHTLY INCLINED ANGLE THAT WILL HELP ALIGN THE VEHICLE'S BACK TIRE.

DRAW A SERIES OF CIRCLES ALONG THESE TWO GUIDELINES TO REPRESENT THE TIRES. ONLY THREE TIRES NEED TO BE DRAWN. THE FOURTH TIRE WILL BE HIDDEN IN THE FINAL DRAWING.

DRAW TWO ELONGATED, UPSIDE DOWN HEXAGONS TO REPRESENT THE FRONT FRAME OF THE LTV.

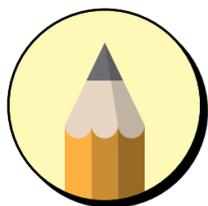


ARTIST HINT:
USE A RULER TO HELP WITH DRAWING YOUR GUIDELINES.

2. ADD FRAME DETAILS AND TIRE FENDERS

DRAW A SERIES OF SEMI-CIRCLE FENDERS ON THE TOP PART OF THE TIRES. BE SURE TO NOTE THAT THE BACK TIRE AND FRONT TIRE FENDERS ARE SLIGHTLY DIFFERENT!

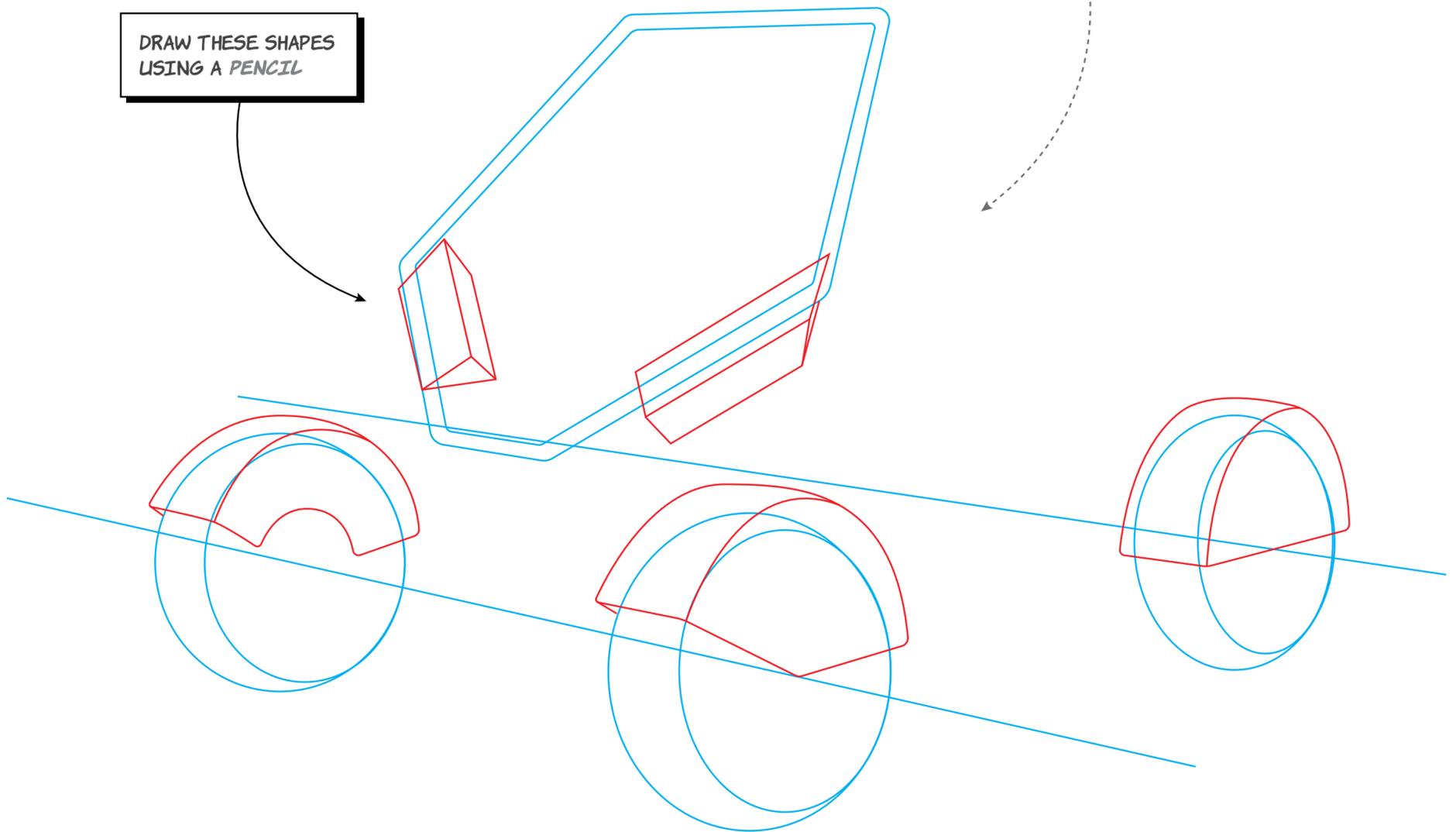
BEGIN TO ADD DETAILS TO THE LTV'S FRONT FRAME.



DRAW THESE SHAPES USING A PENCIL

FUN FACT

THE LTV WILL BE AN UNPRESSURIZED (UNENCLOSED) ROVER THAT ASTRONAUTS WILL USE TO EXPLORE AND CONDUCT EXPERIMENTS AT THE LUNAR SOUTH POLE.

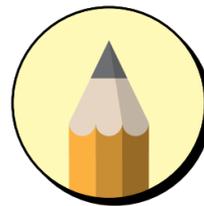


3. CONTINUE ADDING DETAILS

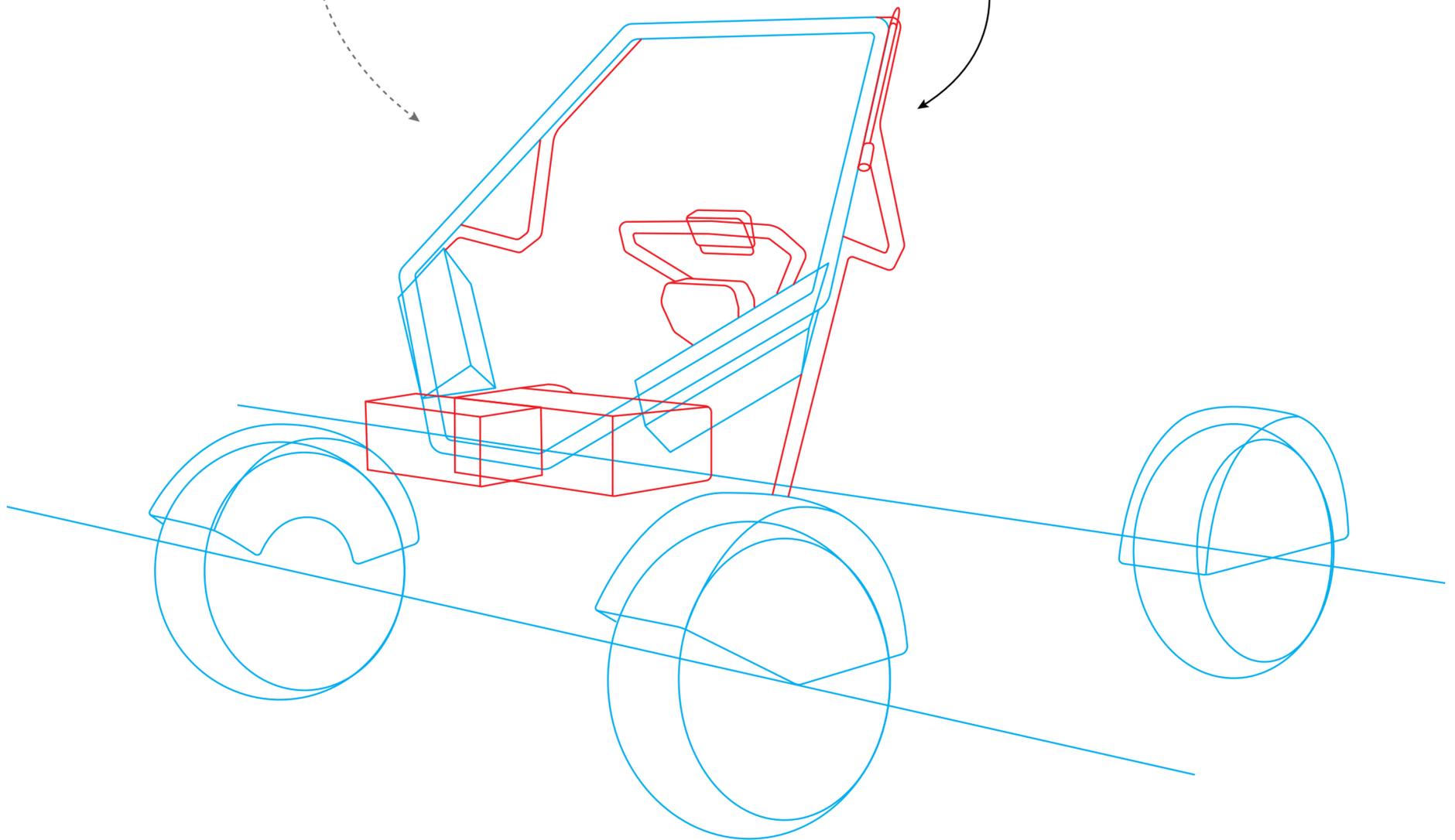
ADD ADDITIONAL DETAILS TO THE FRONT OF THE LTV. THESE DETAILS INCLUDE THE FRONT EQUIPMENT RACK CASING AND THE NAVIGATION CONSOLE WHERE THE ASTRONAUTS WILL CONTROL THE LTV WHILE EXPLORING THE LUNAR SURFACE.

FUN FACT

WITH THE LTV, ASTRONAUTS WILL BE ABLE TO EXPLORE MORE THAN DOUBLE THE AREA THAN CAN BE EXPLORED BY FOOT ALONE. NOT ONLY THAT, BUT WITH THE LTV THEY CAN CARRY MORE TOOLS, COLLECT MORE DIVERSE SAMPLES, AND DO MORE SCIENCE!



DRAW THESE SHAPES USING A PENCIL

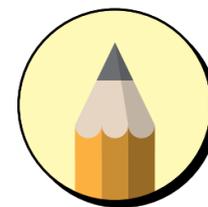


4. ADD BOTTOM FRAME AND FRONT HEADLIGHTS

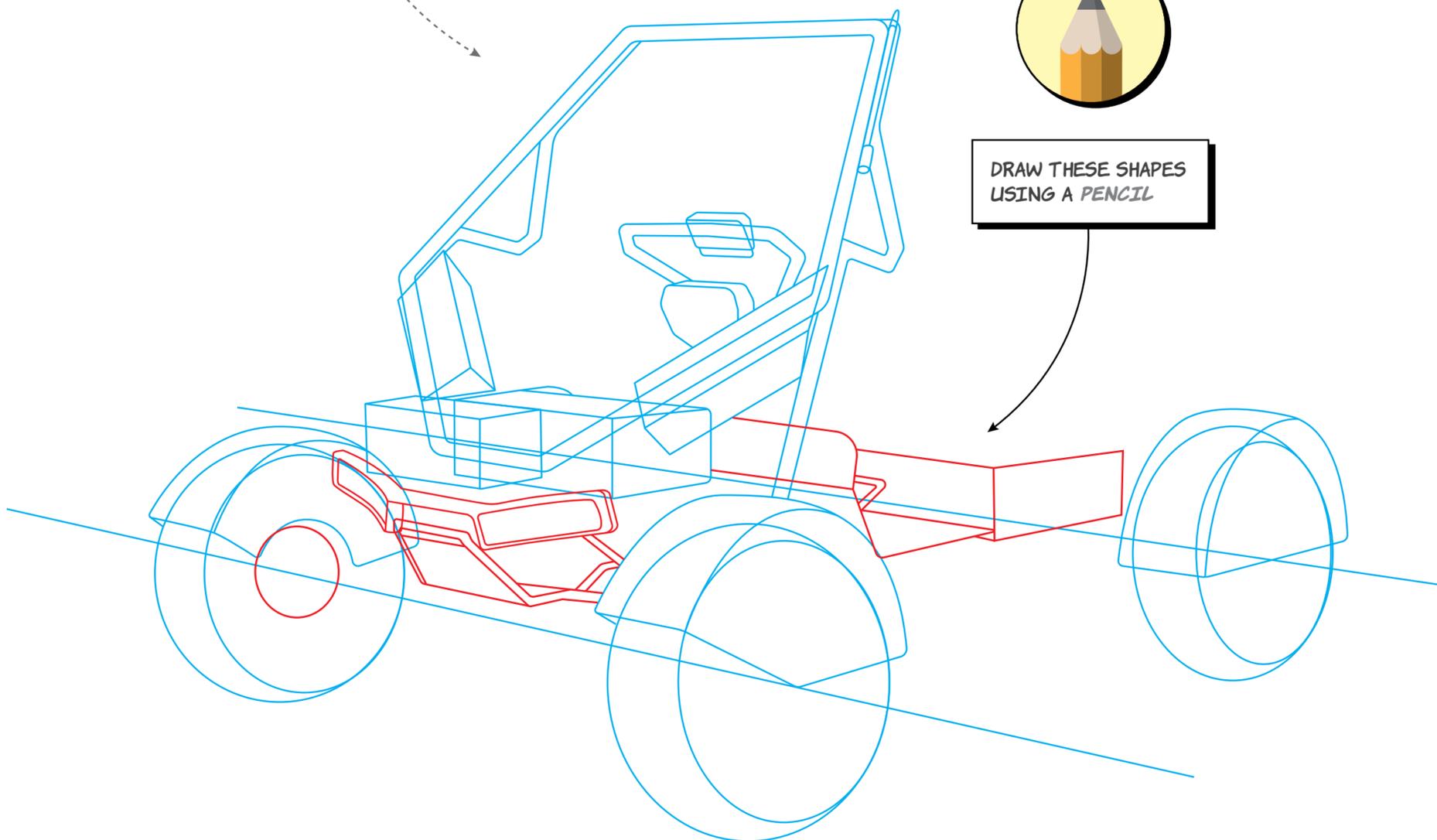
DRAW THE BOTTOM PORTION OF THE LTV, INCLUDING THE BOTTOM BASE OF THE SEATS AND THE VEHICLE'S HEADLIGHTS THAT WILL ALLOW THE ASTRONAUTS TO SEE IN DARK AREAS.

FUN FACT

NASA BELIEVES THAT MANY EARTH-BOUND VEHICLE MANUFACTURERS MAY HAVE INNOVATIVE CONCEPTS TO OFFER FOR LTV DEVELOPMENT.



DRAW THESE SHAPES USING A PENCIL

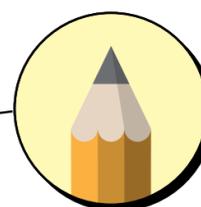


5. CONTINUE ADDING DETAILS

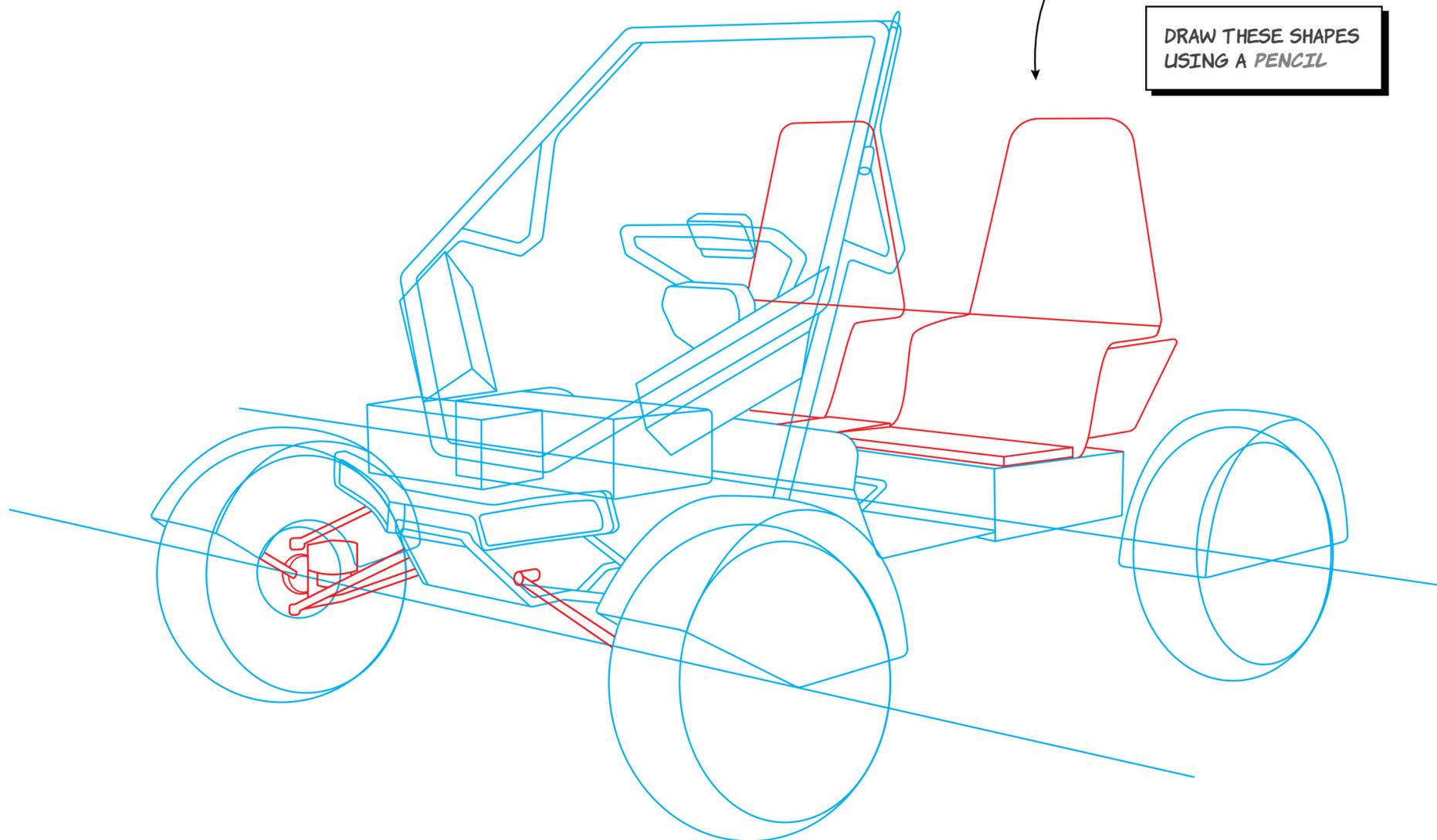
DRAW THE CONNECTING PIECES BETWEEN THE FRONT TIRES AND THE BOTTOM FRAME. DRAW TWO SEATS FOR THE ASTRONAUTS.

FUN FACT

THE LTV WILL BE BUILT TO SURVIVE THE MOON'S EXTREME ENVIRONMENT, INCLUDING TEMPERATURES AT THE LUNAR SOUTH POLE RANGING FROM 280 DEGREES FAHRENHEIT TO MINUS 280 DEGREES FAHRENHEIT.



DRAW THESE SHAPES USING A PENCIL

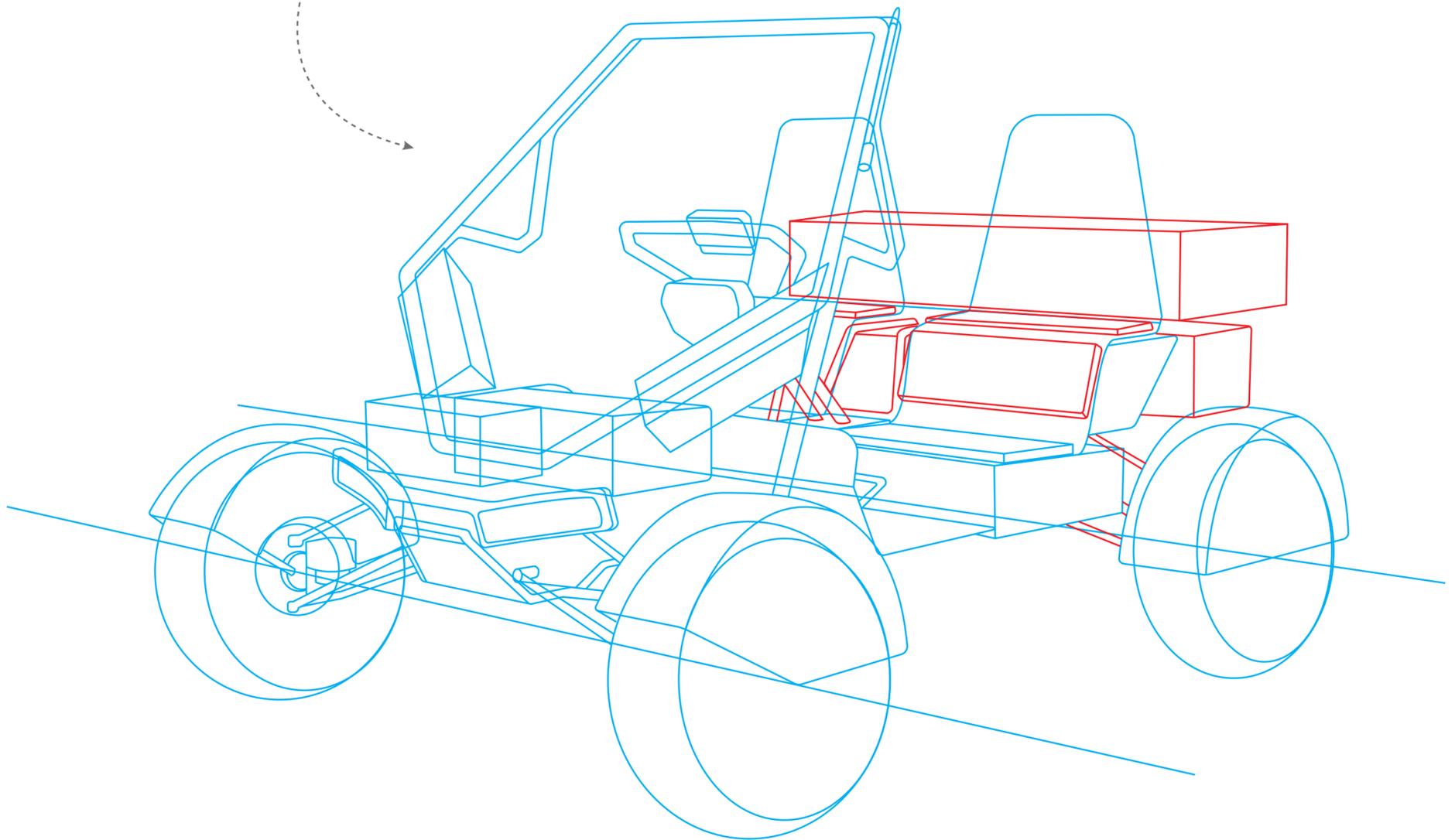


6. CONTINUE ADDING DETAILS

CONTINUE DRAWING THE DETAILS ON THE SEATS. DRAW THE BACK EQUIPMENT RACK CASINGS USING RECTANGULAR SHAPES.

FUN FACT

THE LTV WILL MAINTAIN HUMANITY'S PRESENCE ON THE LUNAR SURFACE WITH ITS CAMERAS, MOBILITY AND SENSORS, PERFORMING SCIENCE, AND RECONNAISSANCE ACTIVITIES IN BETWEEN CREW VISITS. BECAUSE OF ITS SIZE, SPEED, AND CARRYING CAPACITY, IT WILL BE ABLE TO COVER MORE GROUND THAN ANY ROBOTICS EXPLORER BEFORE.

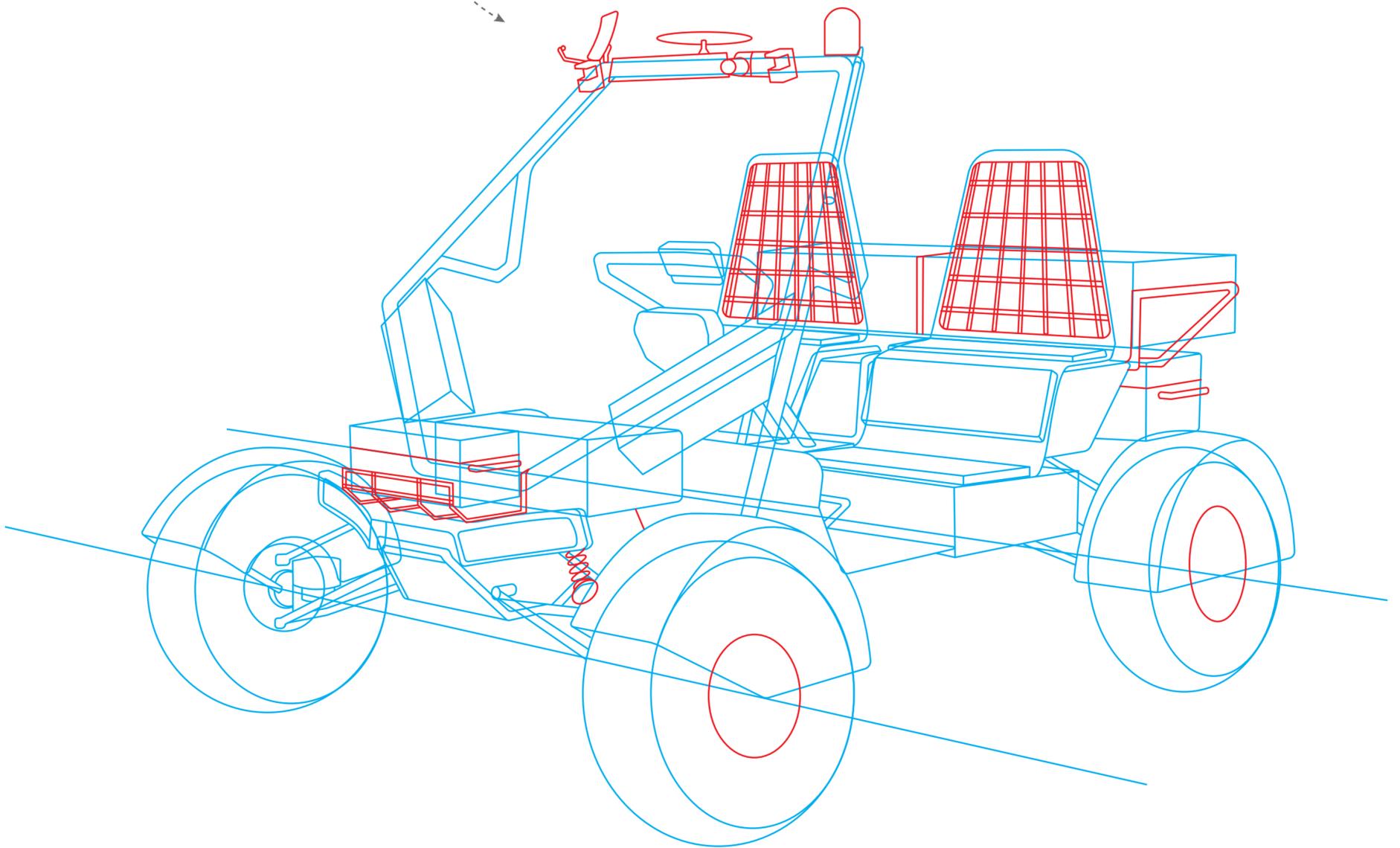


7. ADD FINAL TOUCHES

ADD THE FINISHING DETAILS TO THE LTV, DRAW THE MESH BACKING ON THE SEATS, THE COMMUNICATIONS EQUIPMENT ON THE TOP OF THE FRONT FRAME, TIRE DETAILS, AND THE EQUIPMENT RACK BARS ON BOTH THE FRONT AND BACK OF THE VEHICLE.

FUN FACT

THE LTV WILL HAVE THE CAPABILITY TO BE REMOTE-CONTROLLED FROM EARTH, THE GATEWAY, OR ARTEMIS ASTRONAUTS ON THE MOON.

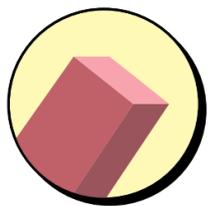


8. INK OUTLINES AND ERASE GUIDELINES

INK THE FINAL OUTLINES AND ERASE ALL PENCIL GUIDELINES. YOU'RE NOW READY TO ADD SHADING OR COLOR!

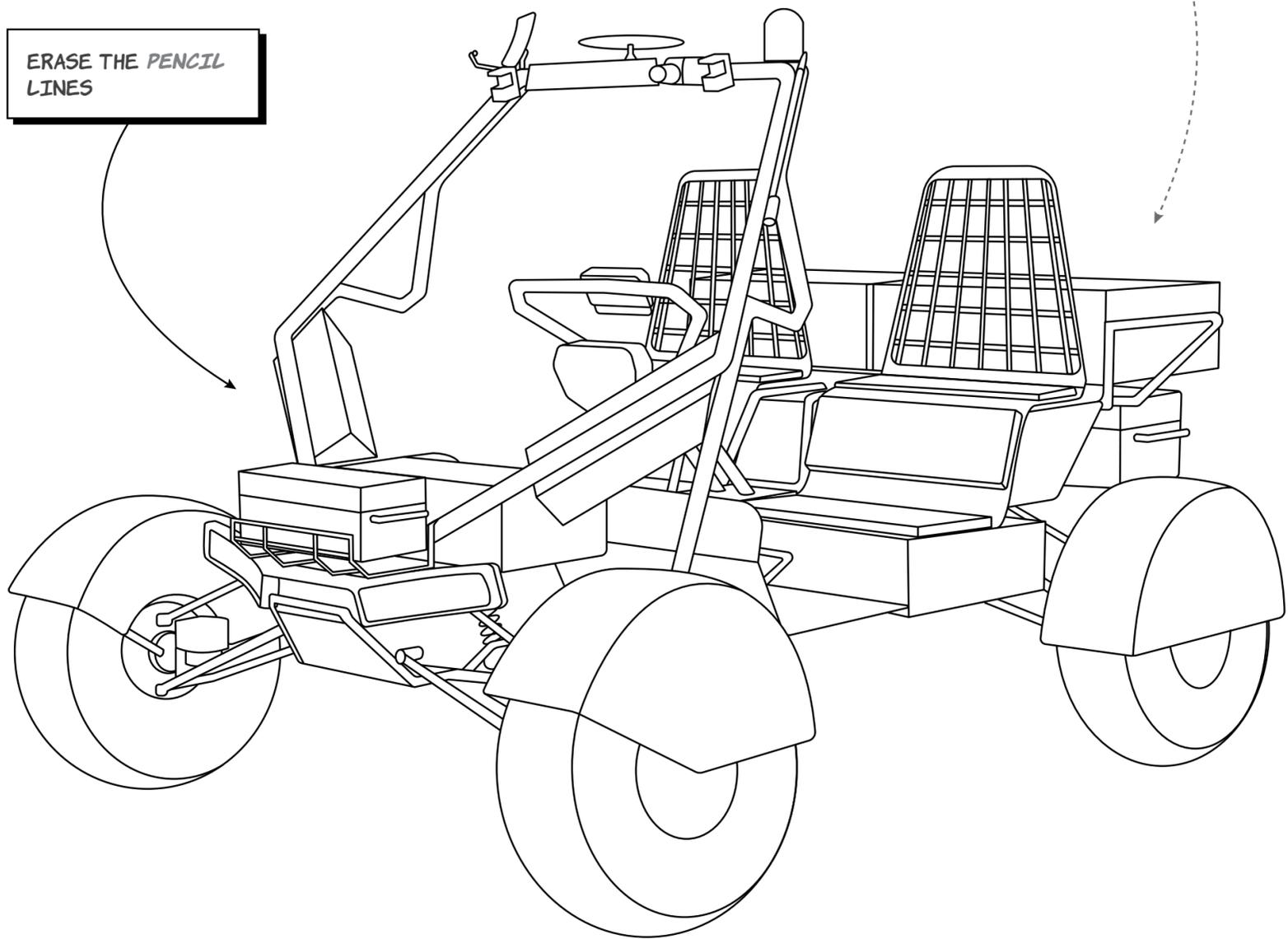


DRAW THESE SHAPES USING A **BLACK PEN**



ERASE THE **PENCIL** LINES

FUN FACT
NASA IS PUSHING THE BOUNDARIES OF ELECTRIC VEHICLE CAPABILITIES FOR THE LTV WITH AN ADDITIONAL GOAL OF SPURRING INNOVATION FOR VEHICLES ON EARTH. ADVANCED ENERGY STORAGE, AUTONOMOUS DRIVING, AND RESILIENCE TO EXTREME TERRAIN ARE ALL HIGH PRIORITIES FOR THE LTV.



9. SHARE YOUR MASTERPIECE!

MAKE IT YOUR OWN! ADD EXCITING COLORS, EXTRA DETAILS,
OR EVEN DRAW THE LTV DRIVING ON THE MOON!

DON'T FORGET TO SHARE YOUR MASTERPIECE ON SOCIAL MEDIA!

#DRAWARTEMIS

ARTIST HINT:
USE THE IMAGE ON
THE FRONT COVER
AS A REFERENCE
FOR SMALL
DETAILS, COLORS,
AND TEXTURES.

