NASA vision for future moon exploration

CREW EXPLORATION VEHICLE (CEV)

Solar panels: Provide power

Propulsion: Unlike Apollo, enough fuel is carried to land anywhere on moon

Service module: Operates on autopilot when all astronauts are on lunar surface

Lunar lander: Takes all four astronauts to surface

Lunar ascent stage

Crew capsule: Reuseable up to 10 times

Diameter: 5.5m – three times volume of Apollo

Astronaut to scale

MISSION SCHEDULE

1. Lander and departure stage launched into orbit. Crew launched three days later
2. Crew capsule docks with lander and heads for moon using departure stage
3. Departure stage jettisoned. Craft enters lunar orbit. Crew transfers to lander
4. Crew lands and explores surface for seven days
5. Crew leaves in lunar ascent stage
6. Docking with service module. Return to Earth
7. Crew transfers to capsule. Other craft jettisoned
8. Capsule enters atmosphere and lands with parachutes

Space shuttle to scale

CREW LAUNCH ROCKET

Crew capsule: Returns crew to Earth

Service module Accommodates up to four astronauts

Second stage: Powered by shuttle main engine

First stage: Shuttle solid rocket booster

CARGO LAUNCH ROCKET

Lunar lander: Takes crew to surface of moon

Departure stage: Takes crew out of Earth orbit and towards moon

Second stage: Powered by five shuttle main engines

First stage: Twin shuttle solid rocket boosters

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Source: NASA