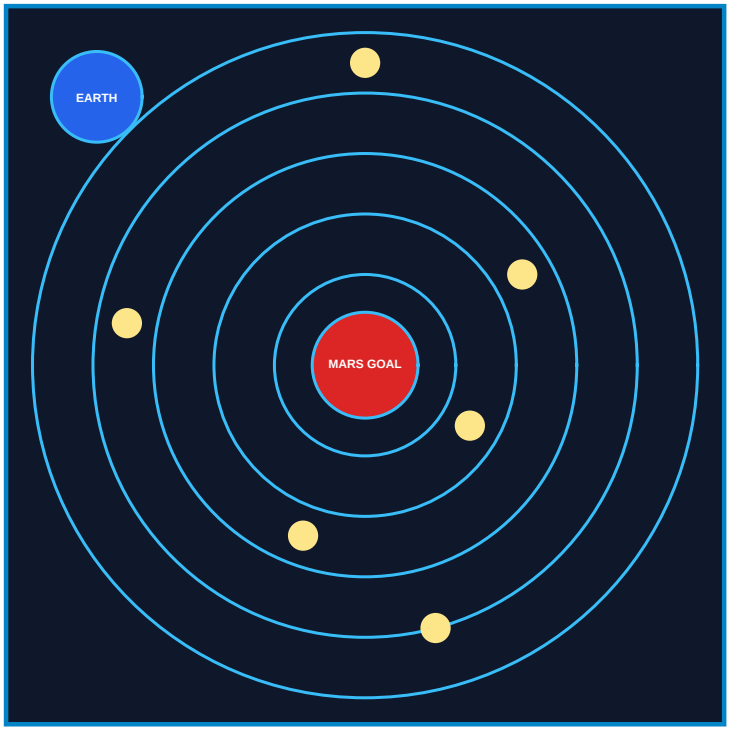
NASA DEEP SPACE NAVIGATION & MISSION CONTROL

SPACE SHUTTLE JOURNEY TO MARS: COSMIC MAZE

Orbital Mechanics: Launch from Earth, Slingshot Asteroids, and Land at Olympus Mons

DIFFICULTY / SPEC
Standard US Letter
Bespoke Printable



FLIGHT TELEMETRY & FLIGHT LAWS

1. Launch from Low Earth Orbit (LEO) and execute Hohmann Transfer Orbit burn.

2. Asteroid Belt Hazard: Avoid intersecting dense asteroid debris fields marked with warning beacons.

3. Lunar Gravity Assist: Slingshot around lunar orbit without crossing boundary lines.

4. Mars Atmospheric Insertion: Guide craft into Jezero Crater landing target without overshooting.

MISSION MILESTONES:

[ ] Trans-Mars Injection --> [ ] Asteroid Slingshot

[ ] Solar Radiation Storm Evaded --> [ ] Touchdown

MISSION CONTROL ASTRODYNAMICS & DELTA-V BUDGET

Trans-Mars Injection Delta-V: ~3.6 km/s --> Transit Time: 210 Days --> Trajectory: Heliocentric Ellipse

Communications Delay: 14 Light-Minutes --> Autonomous Navigation Guidance Active

Entry, Descent & Landing (EDL): 7 Minutes of Terror --> Supersonic Parachute & Sky Crane Deploy

COMMANDER LOG

Commander: _____

Vessel: Hermes IX / Orion

Launch Complex: Cape 39A

MISSION TELEMETRY

[ ] Orbit Insertion Achieved

[ ] Zero Collision Intersects

[ ] Mars Atmosphere Contact

MISSION SUCCESS

Solving Time: _____ Minutes

Fuel Remaining: Nominal

Astronaut Rank: * * * * *

ASTRODYNAMICS TRAJECTORY CALCULATION & FLIGHT JOURNAL:

CHALLENGE RATING: NASA ASTRONAUT & NAVIGATOR