



PROTECT THE GIFT

FIELD MANUAL · FULL EDITION · 2026

MARSTRONAUT[®]

A PROGRAM OF THE FORCE FOR HEALTH[®] NETWORK

in Training[™]

*The Complete Field Manual ·
Group Leader & Trainer Edition*

The Force for Health[®] Network · Learn It · Live It · Share It[™] · Full Edition
2026

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How this manual works

You already live on a spaceship. This is the complete training manual for flying it well — every phase, every card, every badge, every tool.

The **tabs on the right edge** follow the trainee's path: Start → Ground School → Suit Up → Flight School → Careers → Mission 1 → 2 → 3 → Graduation, with a Coach tab at the back. Each section opens with a divider that lists what you will do and what you will earn, then walks the cards in order.

Trainee — what you do, what you earn, where to tap.

Coach / Group Leader — pacing, gates, prompts, what to watch for.

QR tiles — every page, game, board and simulation has its own code. Point a phone at it and the live tool opens.

Worksheets & Mission Log sheets — print them, or work them on a tablet. They are the paper trail of the training.

THE OPERATING SYSTEM

LEARN IT

Lessons, quizzes, knowledge badges.

 Healthy Coins

LIVE IT

Workouts, sleep, service — logged in the trackers.

 Drops

SHARE IT

Teach someone. Send an Earth Dispatch.

 Drops

Knowledge always gates spending — a trainee with 2,000 coins and no Chemistry Badge still cannot build a propulsion system. Badges accumulate and are never lost.

Marstronaut™ delivers standards-aligned enrichment challenges alongside what a school, club or family already does. Sponsors fund seats, never content. Scholarship seats run through The Force for Health® Network's 501(c)(3) fiscal agent.

The Ladder — microcredentials & badges

Every credential in the program, on one spread. The ladder runs in three tiers; the badges are the rungs.

BASIC

Anyone can start. Training ID · Daily Quality · bingo boards · Mission Health Rescue game · Ground School.

AMBASSADOR

Completed Ground School + Flight School and at least one Mission. Eligible to mentor, present, and lead Share It events.

GROUP LEADER

Graduates who lead a chapter (~25 trainees). Runs Mission Control, approves Earth Dispatches, awards badges. Coach training built into this rung.

KNOWLEDGE BADGES — 17, IN MISSION ORDER

Orange = Mission 1 · Purple = Mission 2 · Red = Mission 3. Each badge has a full card in its mission tab.

● Physics

Physical Science

● Chemistry

Chemistry & Combustion

● Engineering

Structural Engineering & Materials

● Math & Calculus

Applied Mathematics

● Biology

Life Science & Systems Biology

● Civics & Leadership

Organizational Design & Civic Responsibility

● Health & Body

Exercise Science & Human Physiology

● Psychology

Human Psychology & Behavioral Science

● First Aid

Emergency First Response

● Nutrition

Applied Nutrition & Food Safety

● Anatomy

Human Anatomy & Musculoskeletal System

● Mental Health

Mental Health First Aid & Wellbeing

● Communication

Interpersonal Communication & Conflict Resolution

● Empathy

Social-Emotional Intelligence

● Conflict Resolution

Mediation & Restorative Practice

● Sustainability & Earth Systems

Environmental Science & Closed-Loop Systems

● Community Health & SDOH

Public Health & Social Determinants of Health

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH

The Ladder — program microcredentials

Beyond the seventeen knowledge badges, the program issues credentials for finishing things — a phase, a board, a build, the whole mission.

Ground School Graduate + 12 Ground School micro-badges (Cell Explorer, Organ Builder, Nutrition Math, Sleep Scientist, Mars Ready, Mars Scientist, Career Ambassador, One Health Champion, Body Builder, First Earth Dispatch, 5 Careers Explored, Ground School Enrolled)

Astronaut ID + EVA Certificate — all 12 spacesuit systems (Build-a-Spacesuit)

Flight School Wings — five cards + Navigation Crisis gate

Launch Clearance — Mission 1 · **Transit Complete** — Mission 2 · **Marstronaut** — Mission 3

Cultural Competency badge — Faith, Culture & Health board, full card

Mission Specialist — Mission Health Rescue arcade game, six levels

Certificate of Completion — signed by Dr. Robert Gillio, CMO, at the Graduation Debrief

Mission gates & currency

Three gates stand between Ground School and the surface of Mars. Currency thresholds are minimums; badge requirements are absolute.

Gate	Currency	Badges (minimum)	What unlocks
Mission 1 Launch (enter simulation)	500 Healthy Coins + 300 Drops	Physics, Engineering, Health & Body	Access to the VAB and all 8 rocket system cards
Mission 2 Unlock (depart for Mars)	800 Healthy Coins; all 8 systems built	First Aid, Psychology, + all M1 badges	The 32-week deep space transit simulation
Mission 3 Unlock (land on Mars)	900 Drops total; 3+ Earth dispatches sent	Biology, Civics, + all M1+M2 badges	Mars colony builder and all three build levels

TWO CURRENCIES

⚙️ **Healthy Coins** are earned in Learn It — lessons, quizzes, badges — and buy the technical systems (propulsion, structure, navigation, life support). 💧 **Drops** are earned in Live It and Share It — activity, service, teaching — and buy the human systems (crew selection, physical training, psychology). A Drop is a tear prevented.

HOW A CARD RUNS

Every card follows the same rhythm: **Confidence check** → **Pre-test** → **Learn It** → **Gate** → **Live It** → **Gate** → **Share It**. The Share It is where coins become Drops, and where the Mission Log gets its entry.

THE COMPASS QUESTION

“What have I done today to make the world — or someone's world — a bit better than if I weren't here?” Ask it at the start of every session and again at the end.



01

Welcome & Orientation

"You already live on a spaceship. It's called Earth, it's flying through space, and that makes every one of us crew on the same mission."

— COACH LUCY

IN THIS SECTION

- Create your Training ID and call sign
- Meet your crew — two companions, six guides
- Take the Career Compass (13 questions)
- Take your first Daily Quality
- Start your Mission Log

YOU WILL EARN

Training ID

First Mission Log artifact



10 +



5 for the first Daily Quality

The core idea

"You already live on a spaceship, traveling through space. It is called planet Earth... A lifeboat through space. How can we all help each other stay alive, survive, and thrive?"

— ORIENTATION

Every human alive is already on the most important mission in history. The question is not whether you are on the mission; it is whether you are training to be the kind of crew this mission deserves: fit, kind, informed, engaged, a team player, a leader.

HELP LIFE THRIVE AT EVERY LEVEL — THE SEVEN RINGS

SELF

FAMILY

FRIENDS

COMMUNITY

WORLD COMMUNITY

ECOSYSTEM

PLANET

Mission-ready starts with your own body and reaches all the way out to the planet. Every card in the program touches at least two rings.

WHAT YOU EARN

- Badges & Certificates — real credentials aligned to 10 standards frameworks
- Launch Trip Eligibility — finish the program → enrolled for a real-world trip to an actual launch
- Lifelong Skills — health literacy, leadership, STEM, civic engagement

YOUR FIRST STEPS

- Watch the Welcome Video
- Meet Your Crew
- Take Your Career Compass
- Enter Ground School

All AI experts are clearly labeled as AI. Clinical questions are routed to Dr. Rob. Crisis indicators trigger emergency resources (911, 988, Crisis Text Line 741741).

TRAINEE

Pick a call sign you would be proud to hear over a radio. Every astronaut has one.

COACH / GROUP LEADER

Run Orientation as one session. End it with the first Daily Quality so the sixty-second habit starts on day one.

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH

Your crew

Nobody trains alone. Two illustrated companions walk beside every trainee, and six expert guides are on call.

Maria Reyes

Trainee Companion (illustrated). Career compass leaning toward Health & Human Performance. "I am good with people but hard STEM scares me."

Marcus Johnson

Trainee Companion (illustrated). Career compass leaning toward Aerospace & Engineering. "I am good with machines. The humanities stuff is new to me."

Coach Lucy

Expert Guide — Motivation & Navigation. AI twin of Lucy Howell, CEO of The Force for Health Network.

Dr. Rob

Expert Guide — Health Education. AI twin of Dr. Robert Gillio, physician.

Commander Sarah Kim

Expert Guide — Aerospace & Engineering. AI persona co-developed with a real aerospace advisor.

Dr. Aisha Patel

Expert Guide — Planetary Science. AI persona co-developed with a real planetary science advisor.

Professor Kwame Osei

Expert Guide — History & Cultures. AI persona co-developed with a real humanities advisor.

Chaplain Rev. Tanya Mitchell

Expert Guide — Spiritual Support. AI persona co-developed with a real chaplain advisor.

THE DAILY QUALITY

Today's Marstronaut Quality — 60-second opt-in (quote, tip, action) earns a Mission Log artifact, 10 Healthy Coins, and 5 Drops for sharing. The twenty-six qualities fall into five clusters: **Science & Systems** · **Health & Body** · **Mind & Character** · **Community & Civic** · **Communication & Art**. The full wheel is in the Coach section.

TRAINEE

Notice which guide you would ask first when stuck — and watch how that changes over the program.

COACH / GROUP LEADER

Maria and Marcus model the emotional journey on purpose: one is STEM-anxious, one humanities-anxious. Use them to normalize "I'm not sure yet."

Career Compass

Thirteen questions map interests onto an eight-point radar and name a Top 3. About ten minutes, no wrong answers, retaken at the end of each phase.

Health & Human Performance

Physicians, nurses, therapists, coaches. People who keep bodies and minds well.

Skilled Trades & Workforce

Machinists, welders, electricians, technicians. The hands that build it all.

Technology & Data

Software developers, cybersecurity specialists, data scientists, AI engineers.

Mission Operations

Flight directors, mission planners, communicators who lead and coordinate.

Aerospace & Engineering

Engineers, scientists, designers who build the vehicles, habitats, and systems.

Supply Chain & Logistics

Planners, coordinators, quality inspectors who ensure the right thing is in the right place.

Science & Research

Astrobiologists, chemists, physicists, environmental scientists exploring how things work.

Education & Community

Teachers, counselors, community health workers, science communicators.

The Compass also captures an **IDEAS seed** — one community concern the trainee cares about — and holds it for the first IDEAS project in Ground School.

TRAINEE

Write your predicted Top 3 on the worksheet before you take it. Then compare.

COACH / GROUP LEADER

Pull the group's Top-3 distribution before Career Training and plan guests around the clusters you see.

Start here — tools

Point a phone camera at any code — the live tool opens. Each code is unique to its page.



Welcome Center

Training ID, Mission Log starter,
daily loop

theforce.health/marstronaut/Marstronaut-Welcome-Onboarding.html



Orientation

First day on campus

theforce.health/marstronaut/Marstronaut-Orientation.html



Career Compass

13 questions → 8 families

theforce.health/marstronaut/Marstronaut-Career-Compass.html



Learner Portal

Your journey, 12 pathways,
today's actions

theforce.health/marstronaut/Marstronaut-Learner-Portal.html



Today's Quality

60-second daily opt-in

theforce.health/marstronaut/Marstronaut-Daily-Quality.html



Maria — Character Sheet

Meet your companion

theforce.health/marstronaut/Marstronaut-Maria-Character-Sheet.html

WORKSHEET

Worksheet · Training ID & Compass prediction

NAME _____

CALL SIGN _____

DATE ____ / ____ / ____

MY TRAINING ID

Trainee name · Call sign · Class year · Career that sounds most interesting right now

COMPASS PREDICTION

Before you take the Career Compass, guess your Top 3 families. After: write the real result beside each guess.

MY IDEAS SEED

One thing in my community I would fix if I could:

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH

REFLECTION SHEET

Mission Log · Day 1

SOL _____

CALL SIGN _____

QUALITY OF THE DAY _____

Today I begin my training as a Marstronaut. What I hope to learn or become...

Which of the seven rings do I already take care of well? Which one do I ignore?

Today's Quality was _____. One action I took:

Every real astronaut keeps a log. Coins for the Learn It, Drops for the Share It — and the Log is where the training becomes yours.

02

Phase 1 · Ground School — Are you ready?

“No astronaut launches before mastering the basics – you earn your readiness, you don't assume it.”

— MARIA

IN THIS SECTION

- Six cards: health literacy, Mars basics, careers, One Health, Build Your Body, the Gate
- Each card: Learn It → Live It → Share It
- Sim A1 – the Ground School Gate (Jeopardy round + health-crisis scenario)
- ~12-20 hours total

YOU WILL EARN

- Cell Explorer
- Organ Builder
- Nutrition Math
- Sleep Scientist
- Mars Ready
- Mars Scientist
- Career Ambassador
- One Health Champion
- Body Builder
- Ground School Graduate
- First Earth Dispatch
- 5 Careers Explored

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH

Health Literacy & Body Systems

The five pillars of a mission-ready human — Physical Health, Reliability, Communication, Teamwork, Leadership — each taught three ways: the concept, a real story (Scott Kelly, Jack Swigert and Apollo 13, the Challenger lesson, Chris Hadfield, Gene Kranz), and a *You Decide* scenario. Then the body itself: cells, organs, systems, plus ISS nutrition, sleep science, hydration, and a self-assessment against the 26 Astronaut Qualities.

MODULES

Pillar 1: Physical Health — The Concept

Pillar 1: Physical Health — Scott Kelly

Pillar 1: Physical Health — You Decide

Pillar 2: Reliability — The Concept

Pillar 2: Reliability — Apollo 13 & Jack Swigert

Pillar 2: Reliability — You Decide

Pillar 3: Communication — The Concept

Pillar 3: Communication — The Challenger Lesson

Pillar 3: Communication — Precision Practice

Pillar 4: Teamwork — The Concept

Pillar 4: Teamwork — Chris Hadfield

Pillar 4: Teamwork — You Decide

Pillar 5: Leadership — The Concept

Pillar 5: Leadership — Gene Kranz & Apollo 13

Pillar 5: Leadership — You Decide

Module B: Pre-Launch Briefing — Cells

Module B: Build Your Body — Stage 1: Cells

Module C: Pre-Launch Briefing — Organs

Module C: Build Your Body — Stage 2: Organs

Module D: Pre-Launch Briefing — Body Systems

Module D: Build Your Body — Stage 3: Systems

Module E: ISS Astronaut Nutrition

Module E: Sleep Science & Deprivation

Module E: Hydration & Health Tracking

Module F: Pre-Launch Briefing — 26 Astronaut Qualities

Module F: 26 Astronaut Qualities — Self-Assessment

BADGES ON THIS CARD

Cell Explorer

Organ Builder

Nutrition Math

Sleep Scientist

Mars Ready

TRAINEE

The pre-test is not graded. Answer honestly so the post-test shows what you actually learned.

COACH / GROUP LEADER

This is the longest card. Split it: pillars in one or two sessions, body modules in another, qualities self-assessment as homework.

Mars Basics · Career Exploration

1.2 MARS BASICS

Earth versus Mars, then your body under threat: supply math for food, oxygen and water; bone-density math; CO₂ the invisible killer; ECLSS and its Earth parallels.

- Module A: Earth
- Module A: The Mars Challenge — Your Body Under Threat
- Module B: Mission Supply Math — Food
- Module B: Mission Supply Math — Oxygen & Water
- Module B: Bone Density Math — The Invisible Countdown
- Module C: CO₂ — The Invisible Killer
- Module C: ECLSS & Earth Parallels
- Module D: Pre-Launch Briefing — Systems Under Mars Conditions
- Module D: Build Your Body — System Connections

1.3 CAREER EXPLORATION

The 10,000-to-1 ratio — for every astronaut, ten thousand people on the ground. Eight career families, career sampling, the honest truth about careers, virtual interviews. **Gate:** sample at least three careers.

- Module A: The 10,000-to-1 Ratio
- Module A: The 8 Career Families — Deep Dive
- Module B: Career Sampling — Medical & Engineering
- Module B: Career Sampling — Comms, Logistics, & Trades
- Module C: Career Compass — Your Natural Fit
- Module D: Pre-Launch Briefing — The Interview
- Module D: Career Ambassador — Virtual Interviews
- Module B: The Honest Truth About Careers
- Module B: Career Families Are Not Boxes

BADGES

- Mars Scientist
- Career Ambassador
- 5 Careers Explored

TRAINEE

Mission Supply Math is real arithmetic with real stakes. Show your work on the worksheet — the numbers are the lesson.

COACH / GROUP LEADER

Career Exploration is the natural place for a first guest speaker. Use the twelve interview questions in the Careers tab.

One Health · Build Your Body · The Gate

1.4 ONE HEALTH CONNECTIONS

The ripple effect and the five rings, home safety awareness, social determinants of health, reading community health data, the dual-use principle, and the One Health thread through the 26 Qualities.

Module A: The Ripple Effect

Module A: The 5 Rings — Deep Dive

Module B: Home Safety — Pre-Launch Briefing

Module B: Home Safety Awareness — Full Module

Module C: Social Determinants of Health

Module C: Reading Community Health Data

Module D: The Dual-Use Principle

Module D: 26 Qualities — The One Health Thread

Module D: 26 Qualities Explorer — One Health Focus

1.5 BUILD YOUR BODY SIMULATOR

Three stages — cells, organs, body systems — in the Vehicle Assembly Building (next tab). Body Lab complete → self-assessment.

1.6 GROUND SCHOOL GATE — SIM A1

Review what you know, learn what the simulation expects, check your mindset, then launch: a Jeopardy-style round on Ground School content and a personal-health crisis — a crew member collapses and the team's reliability is tested.

Ground School Review: What You

The Simulation: What to Expect

Key Concepts to Review Before the Gate

Pre-Simulation Mindset Check

Launch the Ground School Simulation

BADGES

One Health Champion

Body Builder

Ground School Graduate

First Earth Dispatch

TRAINEE

Your First Earth Dispatch badge comes from the Share It — send one message that teaches someone something from Ground School.

COACH / GROUP LEADER

Run the Gate as a live event. Teams of four, one Group Leader as flight director.

Forces That Shape Everything

• Your Body Is a Physics Lab

MARIA'S UNIT — FORCES THAT SHAPE EVERYTHING (GRADES 6–10, 9 LESSON CARDS)

Centripetal force, gravity, inertia and orbital mechanics from hula hoops to Apollo 13. Two threads run through it: the space thread (slingshots, lunar orbits, the Artemis return) and the life thread (children orbiting families, communities as orbital systems).

The Hoop Doesn't The Playground Physics Lab Slingshot — A Stone, a Bucket, a Spacecraft

Falling That Misses the Ground Apollo 13 — Slingshot Around the Moon

Artemis — The Return Arc Human Orbits — Children and Gravity Thanksgiving Orbit

Communities as Orbital Systems Forces Bingo Card (24 Share It challenges)

MARIA & MARCO — YOUR BODY IS A PHYSICS LAB (12 LESSONS)

Roller coasters, basketball, running, jumping: the physics of forces read through the body. Ends with the Body Physics Bingo — 24 challenges.

BASICS BINGO — THE HEALTH-READINESS BOARD (TIER 1)

Mission Nutrition Mission Fitness Mission Sleep Mission Mental Health

Mission Substance Prevention Mission Cardiovascular Health Mission Bone Health

Mission Vision Health Mission First Aid Mission Dental Health Mission Hearing Health

Mission Environmental Health Mission Immune Health Mission Healthy Relationships

Mission Academic Excellence Mission Personal Growth

TRAINEE

Spin in a circle with your arms out. Feel the outward pull. Now name what pulls you back in. That's the whole unit in ten seconds.

COACH / GROUP LEADER

Both units ship with lesson plans and standards tags (NGSS Physical Science, CC Math, CASEL, SHAPE). They stand alone if you only have a physics week.

Ground School — tools

Point a phone camera at any code — the live tool opens. Each code is unique to its page.



Ground School hub

6 cards, Body Lab, Mission Log,
Guide

theforce.health/marstronaut/Marstronaut-Ground-School.html



Maria — Forces Unit

9 lesson cards + Forces Bingo
theforce.health/marstronaut/Marstronaut-Maria-Forces-Unit.html



Sports & Rides Unit

12 lessons + Body Physics Bingo
theforce.health/marstronaut/Marstronaut-Sports-Rides-Unit.html



BASICS Bingo

16 health-readiness missions
theforce.health/marstronaut/Marstronaut-Basics-Bingo.html



Space Bingo

25 squares · Sun to Universe
theforce.health/marstronaut/Marstronaut-Space-Bingo.html



LIVE It Trackers

11 trackers
theforce.health/marstronaut/Marstronaut-Live-It-Trackers.html

Worksheet · Mission Supply Math

NAME _____

CALL SIGN _____

DATE ____ / ____ / ____

FOOD

A crew of 4 eats 1.8 kg of food per person per day. The transit is 210 days. Total food mass = _____ kg. With a 20% safety margin = _____ kg.

OXYGEN & WATER

One person uses about 0.84 kg of oxygen a day and drinks ~2.5 L of water. For 4 people over 210 days: oxygen _____ kg · water _____ L. If the recycler recovers 93% of water, how much must launch with you? _____ L

BONE DENSITY — THE INVISIBLE COUNTDOWN

Astronauts lose roughly 1–1.5% of bone mass per month without countermeasures. Over a 7-month transit that is _____ % to _____ %. What does the Physical Training system buy back?

EARTH PARALLEL

Where on Earth do people ration food, water or medicine until help arrives? What would you pack first?

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH

Mission Log · Ground School

SOL _____

CALL SIGN _____

QUALITY OF THE DAY _____

Which pillar (Physical Health · Reliability · Communication · Teamwork · Leadership) is my strongest? Weakest? Evidence:

One thing about my own body I did not know before the Body Lab:

My First Earth Dispatch – what I taught, and to whom:

Gate debrief: what did the crisis sim reveal about our team?

Every real astronaut keeps a log. Coins for the Learn It, Drops for the Share It – and the Log is where the training becomes yours.



03

Suit Up — Build Your Body & Build-a-Spacesuit

“Your body is the vehicle that carries your mind through space — here on Earth and across the universe. Understand it by building it, part by part.”

— DR. ROB

IN THIS SECTION

- Stage 1 · Cells — seven cell types
- Stage 2 · Organs — heart, lungs, brain required + two of your choice
- Stage 3 · Systems — four required body systems, 360° Explorer unlocks
- Build-a-Spacesuit — 12 EVA systems, goniometer range-of-motion lab

YOU WILL EARN

Cell Explorer

Organ Builder

Body Builder · 360° Human Anatomy Collection

Astronaut ID + EVA Certificate

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH

Build Your Body — the Universal Assembly Engine

Every part is built in four layers: **anatomy** → **how it works** → **keeping it healthy** → **when it goes wrong**. Each layer has a Dr. Rob briefing, a Learn It, a Live It and a Share It.

STAGE 1 — BUILDING BLOCKS (CELLS) — EARNS CELL EXPLORER

The Human Cell DNA & Genes Stem Cells Nerve Cells Muscle Cells Blood Cells
Epithelial Cells

STAGE 2 — ASSEMBLY (ORGANS) — EARNS ORGAN BUILDER (HEART, LUNGS, BRAIN REQUIRED + 2 OF CHOICE)

The Heart The Lungs The Brain The Liver The Kidneys The Stomach The Skin
The Intestines The Pancreas The Gallbladder The Spleen The Bladder The Thyroid
The Adrenal Glands The Eyes The Ears The Esophagus

STAGE 3 — INTEGRATION (BODY SYSTEMS) — 360° HUMAN ANATOMY COLLECTION (4 REQUIRED SYSTEMS)

Cardiovascular System Musculoskeletal System Respiratory System Nervous System
Digestive System Endocrine System

Stage 3 opens the 360° Human Anatomy Collection — the same anatomy visualizer used across the Force for Health Academy.

TRAINEE

Build the heart, lungs and brain first — they are required — then pick two organs you're curious about.

COACH / GROUP LEADER

If you only have two sessions with a group, run Orientation and this page. It is the highest-yield health-education block in the program.

Twelve systems — suit me up

An EVA suit is a one-person spacecraft. Spacesuit Bingo runs its twelve systems as a board — a square opens to the science, a Live It and a Share It — and the goniometer fitting lab measures your own joints the way suit technicians measure an astronaut's.

Oxygen Supply	CO2 Removal
Temperature Control	Humidity & Water
Pressure Containment	Helmet & Visor
Gloves & Dexterity	Mobility Joints
EVA Jetpack (SAFER)	Communications
Radiation Shield	Life Support Backpack (PLSS)

Completing the set earns the **Astronaut ID + EVA Certificate** — the first printable credential of the program.

🎵 Phase theme: “*Twelve Systems (Suit Me Up)*”

TRAINEE
Measure your shoulder, elbow and knee range of motion with the goniometer. Suit engineers call that the fit envelope.

COACH / GROUP LEADER
Pair each spacesuit system with its body-system twin (CO₂ removal ↔ lungs; temperature control ↔ skin and sweat). The analogy is the lesson.

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH

Suit Up — tools

Point a phone camera at any code — the live tool opens. Each code is unique to its page.



Vehicle Assembly Building

Build Your Body, 3 stages

theforce.health/marstronaut/Marstronaut-Vehicle-Assembly.html



Body Lab (Assembly)

Universal Assembly Engine

theforce.health/marstronaut/Assembly/body.html



Spacesuit Bingo

12 EVA systems

theforce.health/marstronaut/Marstronaut-Spacesuit-Bingo.html



Astronaut ID Preview

Your credential

theforce.health/marstronaut/Marstronaut-Astronaut-ID-Preview.html



Body games · Crossword

Anatomy vocabulary

theforce.health/marstronaut/Assembly/games/crossword.html



Body games · Race the Clock

Speed round

theforce.health/marstronaut/Assembly/games/race-the-clock.html

Worksheet · Body-system ↔ spacesuit-system map

NAME _____

CALL SIGN _____

DATE ____ / ____ / ____

Draw a line, or write the pair. Then answer: what happens to the astronaut if each one fails?

Spacesuit system	Body system it stands in for	If it fails...
Oxygen Supply		
CO ₂ Removal		
Temperature Control		
Humidity & Water		
Pressure Containment		
Radiation Shield		
Communications		
Life Support Backpack (PLSS)		

RANGE OF MOTION

Shoulder ____° · Elbow ____° · Knee ____° · Which joint would a suit limit most, and what job would that make hard?

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH

Mission Log · Suit Up

SOL _____

CALL SIGN _____

QUALITY OF THE DAY _____

The organ I chose to build, and why:

One habit I changed this week because of what I learned about a body system:

If my body is my spacecraft, which system needs maintenance first?

Every real astronaut keeps a log. Coins for the Learn It, Drops for the Share It — and the Log is where the training becomes yours.



04

Phase 2 · Flight School — earn your wings

“Mercury got us off the ground, but Gemini taught the hard skills that made the Moon possible. Newton's laws, orbital mechanics, the Hohmann highway to Mars — it all clicks here.”
— MARCUS

IN THIS SECTION

- Five cards (FS-01 → FS-05) with Pause & Reflect eras
- Flight Simulator · Instrumentation Bingo · History of Flight Bingo
- Critical Thinking Trainer · Adapt, Improvise, Overcome · Leave It Better · Interview Coach
- Sim A2 — Navigation Crisis gate

YOU WILL EARN

- Flight School Wings
- Physics badge progress
- Instrumentation & History of Flight boards

The five cards

Phase 2: Flight School — STEM Depth + Career Exploration. You are a citizen of the world. You represent the best people on Earth. Now prove it. Flight School takes you deeper into the science, the systems, the careers,.....

2.1 • Space Science & Physics

Newton's Three Laws from a launchpad; thrust vs. weight, drag vs. velocity; orbital mechanics (Hohmann transfer, 26-month launch window); Earth vs. Mars atmosphere. Live It: Newton's Laws Lab + Mars Weight Calculator.

2.3 • The Full Career Spectrum

Opens the full career landscape: Skilled Trades, Supply Chain & Logistics, Technology & Data, Health & Human Performance, Aerospace & Engineering, Science & Research, Education & Community. Live It: interview, site visi...

2.5 • Navigation Crisis (Simulation Gate)

Three crisis layers: a navigation calculation error (the Mars Climate Orbiter lesson), a communication blackout during a critical maneuver, and a cyber intrusion attempt. Resolve all three to unlock Mission 1: Build the...

2.2 • Instrumentation — 16 Spacecraft Systems

Every spacecraft runs on systems — like your body runs on organ systems. IMU, RCS, ECLSS, TLM, DOCK, EMU, GNC, TPS, ST, PROP, RD, COMM... each mapped to a career. Live It: Systems Matching Challenge; Share It: Earth Appli...

2.4 • Space Innovation Benefits Everyone

The Dual-Use Principle at scale: O₂/CO₂ cycling, water recycling, crew mental health, food production, radiation protection, HVAC — each with an Earth application and One Health impact. 'Your Body IS the First Machine';...

TRAINEE

Card 2.5 is the gate: a navigation error (the Mars Climate Orbiter lesson), a communication problem, and a decision under time pressure. Pass it and Mission 1 unlocks.

COACH / GROUP LEADER

Pacing: one card per session, 3–5 sessions. The four skill trainers can run as stand-alone 45-minute lessons — each ships with its own Teacher's Guide.

Simulator, systems, pioneers

FLIGHT SIMULATOR — FOUR ERAS OF FLIGHT PHYSICS

Balloon (lighter than air) → propeller → jet → rocket. Canvas simulations with experiment claims: make a prediction, fly it, see if you were right.

INSTRUMENTATION BINGO — 16 SPACECRAFT SYSTEMS

Inertial Measurement Unit	Reaction Control System	Environmental Control	Telemetry System
Docking Mechanism	Space Suit (EMU)	Guidance, Navigation & Control	Heat Shield
Star Tracker	Propulsion System	Radiation Dosimeter	Hydroponic Growth System
EVA Operations	Teleoperation Console	Pressure Hatch / Airlock	Crew Resource Management

HISTORY OF FLIGHT BINGO — 16 PIONEERS

Montgolfier Brothers	Konstantin Tsiolkovsky	Wright Brothers	Bessie Coleman
Robert Goddard	Amelia Earhart	Frank Whittle	Tuskegee Airmen
Chuck Yeager	Katherine Johnson	Valentina Tereshkova	Sally Ride
Mae Jemison	Wally Funk	Samantha Cristoforetti	Inspiration4 Crew

🎵 Phase theme: “*Thrust, Lift, Drag*”

TRAINEE

Every spacecraft system has a body-system twin. ECLSS is your lungs and kidneys; the IMU is your inner ear. Find the pair for each square.

COACH / GROUP LEADER

History of Flight comes with collectible PDF trading cards — print them as the reward for a completed row.

Think, adapt, steward, interview

Critical Thinking Skills Trainer

Four lenses — Reality, Values, Scope, Consequence — and the SMART reality test. Grades 8–12 & college.

Leave It Better Than You Found It

Stewardship tracker across three rings — Me, We, Ours. Grades 3–12 & adult.

TRAINEE

Run the Interview Coach with a partner and time each other. Sixty seconds is longer than you think and shorter than you need.

Adapt · Improve · Overcome

Resilience simulator: pick a mission, lock a plan, hit a curveball, work the three-step drill. Grades 6–12 & adult.

The Interview Coach

STAR method — Situation, Task, Action, Result — with a 60-second timer and partner mode.

COACH / GROUP LEADER

These four are your best substitute-teacher days: each stands alone, needs no setup, and has a printed guide.

Flight School — tools

Point a phone camera at any code — the live tool opens. Each code is unique to its page.



Flight School hub

5 cards + Navigation Crisis gate
theforce.health/marstronaut/Marstronaut-Flight-School.html



Flight Simulator

4 eras of flight
theforce.health/marstronaut/Flight-School/flight-simulator.html



Instrumentation Bingo

16 systems
theforce.health/marstronaut/Flight-School/instrumentation-bingo.html



History of Flight Bingo

16 pioneers
theforce.health/marstronaut/Flight-School/history-of-flight-bingo.html



Critical Thinking Trainer

4 lenses + SMART
theforce.health/marstronaut/Flight-School/critical-thinking-skills-trainer.html



Adapt · Improve · Overcome

Resilience simulator
theforce.health/marstronaut/Flight-School/adapt-improve-overcome.html



Leave It Better

Stewardship tracker
theforce.health/marstronaut/Flight-School/leave-it-better-than-you-found-it.html



The Interview Coach

STAR method
theforce.health/marstronaut/Flight-School/the-interview-coach.html



Space Bingo

Know your universe
theforce.health/marstronaut/Marstronaut-Space-Bingo.html

Worksheet · The four forces & one launch

NAME _____

CALL SIGN _____

DATE ____ / ____ / ____

THRUST · WEIGHT · LIFT · DRAG

Draw a rocket on the pad. Label the four forces with arrows. Which two must be unequal for the rocket to leave the ground, and in which direction?

NEWTON ON THE LAUNCHPAD

$F = ma$. The SLS core stage produces about 8.8 million newtons of thrust and the stack masses about 2.6 million kg at liftoff. Acceleration at T+0 $\approx$ ____ m/s². Subtract gravity (9.8) $\rightarrow$ net $\approx$ ____ m/s².

THE HOHMANN HIGHWAY

Why does the launch window to Mars open only every ~26 months? Sketch Earth's and Mars' orbits and the transfer arc.

Mission Log · Flight School

SOL _____

CALL SIGN _____

QUALITY OF THE DAY _____

My Flight Simulator prediction that was wrong – and what it taught me:

The critical-thinking lens I skip most often (Reality · Values · Scope · Consequence):

Navigation Crisis debrief: the decision we made, and what we would change:

Every real astronaut keeps a log. Coins for the Learn It, Drops for the Share It – and the Log is where the training becomes yours.

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH



05

Career Training — sixty careers, find your seat

“These aren't pretend jobs — they have real training steps, real salaries, and real first patients. Learn these pathways now, and the day someone needs you, you'll already know how to step up.”
— DR. ROB

IN THIS SECTION

- Career Ambassador — 10 careers with Dr. Rob videos and honest Q&A
- Pre-Apprentice Healthcare Pathway — 16 real entry careers
- Health Careers · STEM Careers · Self-Reliance Skills · Ambassadors boards
- Retake the Career Compass

YOU WILL EARN

- Career Ambassador badge
- 5 Careers Explored
- Ambassadors Career Bingo (Tier 2)

Ten careers, twelve honest questions

Space Medicine Physician

Medical doctor who keeps astronauts mission-ready in space and reviews their health on Earth before flight.

Nutrition Scientist

Designs astronaut meals that are lightweight, nutritious, and stay fresh for years. Studies how metabolism changes in space.

Exercise Physiologist

Designs daily exercise programs that counter bone and muscle loss in low gravity.

Telemedicine Specialist

Delivers medical care across distances using video, sensors, and AI. Critical for Mars missions with 20-minute comms delays.

Pharmacologist

Studies how medications behave in the human body in space. Drugs can lose potency or work differently in zero-g.

Biomedical Engineer

Designs medical devices that work in space — from tiny sensors to full life-support systems.

Behavioral Health Specialist

Psychologist or psychiatrist who supports crew mental health during isolation, conflict, and stress.

Radiobiologist

Studies how cosmic and solar radiation damages human cells, and how to protect astronauts.

Epidemiologist

Tracks how disease moves through populations. In space, prevents outbreaks in sealed crew environments.

Occupational Health Specialist

Keeps workers healthy in dangerous jobs — including astronauts, launch crews, and ground technicians.

THE TWELVE QUESTIONS EVERY AMBASSADOR ANSWERS

- What is your job?
- What did you study or train for?
- How long did it take to get where you are?
- What is your favorite part of the job?
- What do you not like about it?
- How much do you get paid?
- Can you advance to a higher role?
- What math or science do you use?
- What is the most important skill nobody told you about?

TRAINEE

Log three careers you had never heard of before this week.

COACH / GROUP LEADER

Use the twelve questions verbatim with any guest speaker. The salary question is on purpose — honesty is the brand.

Sixteen real doors

Sixteen entry careers, each with real training steps, a pathway from middle school to career entry, and hands-on missions. Three tiers: **Entry Level · Hospital/Clinic · Advanced/Specialty.**

Certified Nursing Assistant (CNA)	Home Health Aide
Emergency Medical Technician (EMT)	Phlebotomist
Medical Assistant	Radiology Technician
Physical Therapist Assistant (PTA)	Occupational Therapy Assistant (OTA)
Clinical Skills Technician	Infection Control Specialist
OSHA Safety Coordinator	Health Equity Advocate
Career Navigator & Ethics Counselor	Digital Health Navigator
Dietary Technician	Soft Skills Professional

BINGO PATTERNS

Direct Patient Care

Clinical & Technical

Foundational Knowledge

Professional Development

Direct Care Column

Clinical Knowledge Column

Emergency & Safety Column

Specialty Skills Column

Healthcare Leadership Path

Community Health Path

Standards: NHES Standard 1 · CTE Health Science · ISTE 1.1

TRAINEE

Pick one door. Find the real training program nearest you and write down how long it takes.

COACH / GROUP LEADER

Hospital systems make ideal chapter hosts here — a pre-apprentice cohort of ten students a year is one of the program's first-wave partner asks.

Four bingo boards

HEALTH CAREERS FOR MARS (12 VIDEOS)

Exercise Physiologists Space Medicine Biomedical Engineers Nutrition Scientists
Radiobiologists Telemedicine Specialists Behavioral Health Epidemiologists Pharmacologists
Occupational Health

STEM CAREERS FOR MARS

Aerospace Engineers Astrophysicists Astrobiologists Planetary Geologists Roboticists
Space Medicine Specialists Software & Data Scientists Spacecraft Designers
Comms & Media Specialists

SELF-RELIANCE SKILLS — MEDICAL CARE WHEN THERE IS NO 911

Self-Reliant Medical Care: Introduction Wound Care Burns Fractures IV Therapy
Medication & Pharmacy Psychological First Aid Dental Emergencies Infections
Medical Tech & Telemedicine BLS — Basic Life Support Self-Reliance Mastery

AMBASSADORS CAREER BINGO (TIER 2)

Aerospace Engineer Flight Surgeon Space Systems Tech Robotics Engineer
Environmental Systems Eng. Aerospace Welder Aerospace Physiologist
Mission Control Specialist Astrobiologist Radiation Safety Specialist Aerospace Software Eng.
Space Agriculture Specialist

TRAINEE

Every square has a Learn It, Live It and Share It behind it. The square is the door; the coins are behind it.

COACH / GROUP LEADER

AMBASSADORS Career Bingo ships with a lesson plan and Teacher's Guide (grades 5–12, 45 min).

Careers — tools

Point a phone camera at any code — the live tool opens. Each code is unique to its page.



Career Ambassador

10 careers, Dr. Rob videos

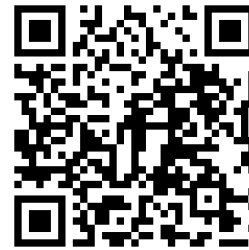
theforce.health/marstronaut/Marstronaut-Career-Ambassador.html



Pre-Apprentice Pathway

16 healthcare careers

theforce.health/marstronaut/Marstronaut-PreApprentice-Pathway.html



Mars Career Thread

Careers across the mission

theforce.health/marstronaut/Mars-Career-Thread.html



Health Careers Bingo

12 videos

theforce.health/marstronaut/Marstronaut-Health-Careers-Bingo.html



STEM Careers Bingo

Careers that get us to Mars

theforce.health/marstronaut/Marstronaut-STEM-Careers-Bingo.html



Self-Reliance Skills Bingo

Medical care on Mars

theforce.health/marstronaut/Marstronaut-Self-Reliance-Skills-Bingo.html



AMBASSADORS Career Bingo

Tier 2 board

theforce.health/marstronaut/Marstronaut-Ambassadors-Bingo.html



Career Compass (retake)

Your compass evolves

theforce.health/marstronaut/Marstronaut-Career-Compass.html



Interview Coach

STAR practice

theforce.health/marstronaut/Flight-School/the-interview-coach.html

Worksheet · Career interview (STAR)

NAME _____

CALL SIGN _____

DATE ____ / ____ / ____

WHO I INTERVIEWED

Name · Job title · Where they work · How I found them

THEIR ANSWERS TO THREE OF THE TWELVE QUESTIONS

Q: _____ A:

MY STAR STORY FOR THIS CAREER

Situation · Task · Action · Result — sixty seconds, out loud.

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH

Mission Log · Careers

SOL _____

CALL SIGN _____

QUALITY OF THE DAY _____

My Compass Top 3 at the start of the program → now:

Three careers I had never heard of:

The career that surprised me most, and why:

One person I could shadow for a day:

Every real astronaut keeps a log. Coins for the Learn It, Drops for the Share It — and the Log is where the training becomes yours.



06

Mission 1 · Build the Rocket

“A rocket is just a very honest team: if one system fails, none of them fly. This is where knowledge becomes something that actually leaves the ground.”

— MARCUS

IN THIS SECTION

- Five cards (3.1 → 3.5) inside the Vehicle Assembly Building
- Eight rocket systems, each gated by a knowledge badge
- Rocket Assembly Builder — six-stage Artemis SLS stack
- Sim A3 — Launch Control gate

YOU WILL EARN

Physics · Chemistry · Engineering · Math & Calculus · Biology · Civics & Leadership · Health & Body · Psychology

Launch Clearance

From blueprint to launchpad

Phase 3: Build the Rocket — From Blueprint to Launchpad. Flight School taught you the science and the careers. Now you engineer the machine. Phase 3 takes you inside the Artemis Space Launch System — the most powerful r.....

3.1 • Rocket Engineering Fundamentals

Tsiolkovsky rocket equation, thrust-to-weight ratio (SLS ≈ 1.53), staging, propulsion types (solid/liquid/hybrid), Max-Q, thermal protection. Live It: Water Rocket Lab.

3.3 • The Launch Team

For every 1 astronaut, 10,000+ people — propulsion engineers, welders, electricians, crane operators, HVAC techs, painters, truck drivers. Live It: Launch Team Career Research; Share It: Launch Team Career Card.

3.5 • Launch Control (Simulation Gate)

Three crisis layers: Weather Hold (launch window math), Sensor Anomaly (SRB segment 3 temperature — proceed or scrub?), Go/No-Go Poll. Resolving all three clears you for launch and Phase 4.

3.2 • Systems Integration

The 6 major SLS components (Mobile Launcher, SRBs, Core Stage, ICPS, Orion, LAS), integration testing in the VAB, stacking sequence, 1,000+ step countdown. Live It: Rocket Assembly Builder.

3.4 • Engineering for Everyone

Spinoffs: lightweight materials, thermal protection, fuel cells, precision manufacturing, clean rooms, telemetry, water purification, scratch-resistant lenses, HACCP food safety. Live It: Engineering Design Process Chal...

TRAINEE

Gate to enter: 500 Healthy Coins, 300 Drops, and the Physics, Engineering and Health & Body badges. Start earning in Ground School.

COACH / GROUP LEADER

Suggested pacing: 3–4 class periods. Badge-earning maps onto units you already teach — Physics, Chemistry, Biology.

Every system needs a badge

System	Badge	Cost	Earth application
Rocket Structure Fuselage, heat shield, payload fairing	Engineering	180 Coins	Materials science in buildings, bridges, vehicles, infrastructure
Propulsion System Fuel type, thrust, staging sequence	Chemistry	220 Coins	Combustion chemistry in engines, energy generation, industrial processes
Life Support Air, water, food for 8-month transit	Biology	160 Coins + 120 Drops	Clean air, clean water, nutrition — core public health competencies
Navigation & Trajectory Launch window, orbital mechanics	Math & Calculus	200 Coins	GPS, weather forecasting, logistics, data science careers
Crew Selection Qualifications, skills matrix, fitness	Civics & Leadership	140 Drops	Team building in healthcare, emergency response, business, sports
Physical Training Strength, cardiovascular, bone density	Health & Body	160 Drops	Preventing heart disease, osteoporosis, diabetes — same exercises
Mission Planning Weight budget, supplies, timelines	Math & Calculus	140 Coins + 80 Drops	Project management, logistics, budgeting in every career field
Psychology & Crew Compatibility Resilience, communication, stress	Psychology	180 Drops	Communication styles, mental health, team cohesion in any workplace

Five systems are STEM-focused and paid in Coins; three are human-focused and paid in Drops. All eight are required for launch clearance.

Six stages of the Artemis SLS

Assemble NASA's Artemis SLS component by component: each stage has LEARN text, Careers at This Stage, Flashcards, and a 3-question Quiz Gate before installing. 6 stages → ignition sequence: 'Your SLS is ready for Mars.

01 Mobile Launcher & Launch Pad

The foundation that holds it all · Careers: Construction Worker, Electrician, Structural Engineer

02 Solid Rocket Boosters

75% of liftoff thrust · Careers: Chemical Engineer, Machinist, Quality Inspector

03 Core Stage (The Backbone)

212-foot orange powerhouse · Careers: Propulsion Engineer, Welder, Cryogenics Technician

04 Interim Cryogenic Propulsion Stage

The final push beyond Earth · Careers: Aerospace Engineer, Software Developer, Test Engineer

05 Orion Spacecraft + Service Module

Crew capsule for 4 astronauts · Careers: Flight Surgeon, Materials Scientist, Electrical Engineer

06 Launch Abort System + Fairings

Emergency escape and protection · Careers: Safety Engineer, Systems Integration Specialist, Pyrotechnics Technician

THE LAUNCH TEAM — 12 CAREERS YOU MEET IN MISSION 1

Propulsion Engineer Aerospace Welder Aerospace Electrician Flight Software Engineer
 Quality Assurance Inspector Precision Machinist Heavy Lift Crane Operator
 HVAC & Clean Room Technician Systems Integration Engineer Assembly Technician
 Test Conductor Structural Engineer

TRAINEE

Build it once for fun, then once for the badge. The three-question quiz gate before each stage is the real Learn It.

COACH / GROUP LEADER

Launch Control (3.5) is three layered crises: a weather hold with launch-window math, a sensor anomaly, and a go/no-go call. Run it as a room.

Mission 1 — tools

Point a phone camera at any code — the live tool opens. Each code is unique to its page.



Mission 1 — Build the Rocket

5 cards + Launch Control gate
theforce.health/marstronaut/Marstronaut-Mission-1-Build-The-Rocket.html



Rocket Assembly Builder

6-stage SLS build
theforce.health/marstronaut/Mission-1/rocket-assembly-builder.html



Mission Control — Interior

Your home base
theforce.health/marstronaut/Marstronaut-Mission-Control-Interior.html



Card Collection

60 cards · Rockets, Missions, Pioneers
theforce.health/marstronaut/Marstronaut-Card-Collection.html

Badge cards · Mission 1

Physics Badge

PHYSICAL SCIENCE

EARN BY	Complete lessons on: Newton's Laws of Motion, force and thrust, kinetic and potential energy, mass and velocity. Pass a quiz demonstrating application of $F=ma$ to rocket launch scenarios.
UNLOCKS	Mission 1 gate (minimum entry requirement). Conceptual foundation for propulsion, navigation, and structural load calculations.
EARTH USE	Understanding forces in everyday life — car safety, sports biomechanics, construction loads, bridge design.
MUST KNOW	• Newton's three laws of motion and how they apply to launch and spaceflight • Relationship between force, mass, and acceleration ($F=ma$) • Kinetic vs. potential energy and energy transfer in propulsion

Chemistry Badge

CHEMISTRY & COMBUSTION

EARN BY	Complete lessons on: chemical reactions, combustion chemistry, oxidizers and fuels, energy release in chemical bonds. Pass a quiz on fuel types and reaction products.
UNLOCKS	Propulsion System (220 Healthy Coins) — unlocks the rocket's engines and staging sequence.
EARTH USE	Energy generation, car engines, industrial processes, understanding fuel labels and chemical safety.
MUST KNOW	• What a combustion reaction is and what products it creates (CO_2, H_2O, energy) • The role of oxidizers — why rockets carry their own oxygen supply • Liquid vs. solid propellants: trade-offs in thrust, control, and storage

Badge cards · Mission 1

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH

Engineering Badge

STRUCTURAL ENGINEERING & MATERIALS

EARN BY	Complete lessons on: materials science, stress and strain, heat resistance, payload design. Complete a design challenge where students select materials for a heat shield given competing constraints.
UNLOCKS	Rocket Structure (180 Healthy Coins) — unlocks fuselage, heat shield, and payload fairing. Also required for the Mission 2 Equipment Malfunction event.
EARTH USE	Architecture, civil engineering, vehicle design, manufacturing — any field that builds things that must withstand force and temperature.
MUST KNOW	• Properties of materials: strength, flexibility, thermal resistance, weight • What a heat shield does and why reentry generates extreme heat (atmospheric friction) • Payload fairings: protecting cargo during launch from vibration and aerodynamic forces

Math & Calculus Badge

APPLIED MATHEMATICS

EARN BY	Complete lessons on: ratios and proportional reasoning, algebraic equations, basic trigonometry, introduction to rates of change. Complete a navigation problem calculating a simplified Earth-Mars transfer orbit window.
UNLOCKS	Navigation & Trajectory (200 Healthy Coins) AND Mission Planning (140 Healthy Coins + 80 Drops) — unlocks two of the eight systems.
EARTH USE	GPS systems, logistics, data science, weather forecasting, financial modeling, supply chain management.
MUST KNOW	• Proportional reasoning: scaling quantities up and down (fuel, supplies, distance) • Rate problems: consumption per day, distance per time, depletion calculations • Basic orbital concept: why a spacecraft launched at the right moment intercepts Mars

Badge cards · Mission 1

Biology Badge

LIFE SCIENCE & SYSTEMS BIOLOGY

EARN BY	Complete lessons on: cellular respiration, photosynthesis, the carbon cycle, human metabolism, and how living systems require air, water, and food. Pass a quiz on what happens physiologically when each is absent.
UNLOCKS	Life Support System (160 Healthy Coins + 120 Drops) in Mission 1. Also required for the Solar Radiation event in Mission 2, and the Greenhouse and CO ₂ Scrubber in Mission 3. Mission 3 entry gate badge.
EARTH USE	Public health, environmental science, food systems, community health — understanding what every human body needs to survive and thrive.
MUST KNOW	• Cellular respiration: how cells convert oxygen and glucose to energy and CO₂ • Why CO₂ buildup is dangerous: hypercapnia, its symptoms, and timeline • Water in the body: hydration, electrolytes, dehydration stages and effects

Civics & Leadership Badge

ORGANIZATIONAL DESIGN & CIVIC RESPONSIBILITY

EARN BY	Complete lessons on: organizational roles and responsibilities, team selection criteria, civic duty, and what makes a community function. Complete a crew selection simulation choosing a balanced team from candidate profiles.
UNLOCKS	Crew Selection (140 Drops) — unlocks the human roster for the mission. Also connects to Colony Charter resolution approach in Mission 3.
EARTH USE	Any team-based career: healthcare, emergency response, business management, sports, military, government. Understanding why diverse, complementary skill sets outperform homogeneous ones.
MUST KNOW	• Why crew selection is a systems problem, not just a performance problem • Complementary skills: why a crew of all pilots is worse than a mixed crew • Role clarity: what happens when responsibilities are unclear in high-stakes situations

Badge cards · Mission 1

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH

Health & Body Badge

EXERCISE SCIENCE & HUMAN PHYSIOLOGY

EARN BY	Complete lessons on: cardiovascular fitness, muscular strength, bone density and calcium metabolism, the effects of microgravity on the human body. Log 30 days of physical activity (Live It component — earns Drops).
UNLOCKS	Physical Training (160 Drops) in Mission 1. Also required for Heat Exhaustion event in Mission 2, Hydration Pack supply purchase in Mission 2, and Mission 2 entry gate.
EARTH USE	Preventing cardiovascular disease, osteoporosis, and diabetes. Understanding exercise as medicine. Career readiness for nursing, physical therapy, personal training, sports medicine, and public health.
MUST KNOW	• What happens to muscle mass in microgravity and how resistance exercise mitigates it • Bone density loss in space: calcium leaching, the role of weight-bearing exercise on Earth • Cardiovascular adaptation to zero-g: fluid shift, orthostatic intolerance on return

Psychology Badge

HUMAN PSYCHOLOGY & BEHAVIORAL SCIENCE

EARN BY	Complete lessons on: personality types and communication styles, stress and coping mechanisms, group dynamics and team cohesion, conflict prevention, and psychological safety. Complete a team compatibility assessment activity.
UNLOCKS	Psychology & Crew Compatibility (180 Drops) in Mission 1. Also required for the Psychological Crisis event in Mission 2 and Isolation scenario in Mission 3.
EARTH USE	Every team environment: classrooms, workplaces, hospitals, military units, sports teams. Understanding why psychological safety is a performance variable, not a soft extra.
MUST KNOW	• Personality frameworks: how different people process stress, information, and conflict • Psychological safety: what it is, what destroys it, and what it costs when absent • Long-duration confinement: how isolation and monotony affect mood, cognition, and relationships

Worksheet · Launch readiness checklist

NAME _____

CALL SIGN _____

DATE ____ / ____ / ____

System	Badge earned?	Coins / Drops paid	Installed ✓
Rocket Structure			
Propulsion			
Life Support			
Navigation & Trajectory			
Crew Selection			
Physical Training			
Mission Planning			
Psychology & Crew Compatibility			

THE ROCKET EQUATION

$\Delta v = v_e \cdot \ln(m_0/m_1)$. If exhaust velocity is 4,400 m/s and the mass ratio is 12, $\Delta v \approx$ ____ m/s.
Why are rockets ninety percent fuel?

Mission Log · Mission 1

SOL _____

CALL SIGN _____

QUALITY OF THE DAY _____

The system I found hardest to earn, and the badge that gated it:

A rocket is a very honest team. Where is my team's weakest system?

Launch Control debrief: our go/no-go call and what the data actually said:

Every real astronaut keeps a log. Coins for the Learn It, Drops for the Share It — and the Log is where the training becomes yours.

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH



07

Mission 2 · The Journey — 32 weeks to Mars

“Surviving the trip isn't just engineering, it's teamwork and patience, and the crew that communicates wins. Strap in, Marstronaut. Mars is seven months away.”

— MARCUS

IN THIS SECTION

- Five cards (4.1 → 4.5): transit science, crew systems, mission ops, the human factor
- 32 virtual weeks · six crises · two-level decisions
- An Earth Dispatch after every resolved event
- Sim A4 — Deep Space Emergency gate

YOU WILL EARN

First Aid · Nutrition · Anatomy · Mental Health · Communication

Transit Complete

Seven months, three hundred million miles, one crew

Phase 4: The Journey — 7 Months, 300 Million Miles, One Crew. You've built the rocket. Now you're inside it. The journey to Mars takes 7–9 months — longer than any voyage in human history. (Simulation: 32 virtual weeks.....)

4.1 • Transit Science

Hohmann transfer orbit, delta-v budget, 3–24 min communication delay, ~300 mSv radiation exposure, what space does to the body (1–2% bone loss/month). Live It: Communication Delay Experiment.

4.3 • Mission Operations

Mission Control roles and Earth equivalents: Flight Director, CAPCOM, EECOM, GNC, FIDO, Surgeon. Live It: Mission Control ↔ My Community.

4.5 • Deep Space Emergency (Simulation Gate)

Day 147 of 210, 12.5-min delay, three crises at once: Solar Storm (30 min to shelter), Life Support Malfunction (CO₂ scrubber fails), Crew Conflict (one freezes, one panics). Complete to unlock Phase 5.

TRAINEE

Gate to depart: 800 Healthy Coins, all eight systems built, First Aid and Psychology badges plus everything from Mission 1.

4.2 • Crew Systems Management

ECLSS life support monitoring (CO₂ thresholds 0.5%/3%/8%), 93% water recycling, food management (1.8 kg/person/day), 2 hrs/day exercise, medical protocols with telemedicine delay. Live It: 24-Hour Personal Life Support...

4.4 • The Human Factor

Isolation psychology (third-quarter phenomenon), 'You've already been on this mission' (COVID quarantine, dorm life, family reunions, lockdowns), conflict resolution techniques (I-statements, active listening, 24-hour r...

COACH / GROUP LEADER

Suggested pacing: 5–6 periods, one or two virtual weeks per session. You can trigger any crisis manually as a whole-class prompt.

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH

Every Mars problem is an Earth problem

Event	On the ship	Earth parallel	Badge · cost
Laceration Emergency	Deep cut during EVA; uncontrolled bleeding; 18-min Earth communication delay	Wound care at a sports event, hiking accident, or school emergency	First Aid · 80 Drops
Food Poisoning Outbreak	Contaminated food supply; two crew members vomiting; dehydration risk	Post-hurricane food safety failure; oral rehydration until FEMA arrives	Nutrition · 70 Drops
Solar Radiation Storm	Particle event detected; 30-min window to reach shielded section	UV exposure & sun safety; cumulative radiation = skin cancer risk on Earth	Biology · 80 Coins
Psychological Crisis	Week-14 crew member withdrawal, sleep changes, appetite loss	Depression & burnout signs in a friend or colleague; mental health first aid	Psychology · 90 Drops
Supply Rationing	Food at 35% with 12 weeks remaining; unsustainable consumption rate	Post-disaster rationing until relief arrives; equitable distribution decisions	Health & Body · 60 Coins + 60 Drops
Equipment Malfunction	CO ₂ scrubber failure; incompatible replacement parts; 4 hours to fix	Apollo 13 resourcefulness; improvised problem-solving with available materials	Engineering · 100 Coins

Every event asks a **two-level decision**: fix the problem on the ship, then write the lesson home. Every resolved event generates an **Earth Dispatch** — the Share It moment and a ready-made formative writing piece.

The people on the ground

Mission Control roles and their Earth equivalents: Flight Director, CAPCOM, EECOM, GNC, FIDO, Surgeon. Every one has a hospital, school or city-hall twin.

EIGHT CAREERS YOU MEET IN TRANSIT

Crew Psychologist — Mission Control Dr. Maya Richardson	Crew Family Support — Social Worker Marcus Chen
Creative Programs Designer — Art Therapist Lucia Fernandez	Flight Surgeon — Crew Health Monitor Dr. Amara Osei
Space Nutrition Scientist Jasmine Park	Zero-Gravity Exercise Protocol Designer Derek Williams
Deep Space Communications Engineer Priya Kapoor	International Crew Cultural Liaison Yuki Tanaka

THE HUMAN FACTOR

Isolation psychology and the third-quarter phenomenon. You have already been on this mission — lockdowns, dorms, family reunions — and crew psychology is just a precise name for how people get along in tight spaces.

TRAINEE Your Earth Dispatch is read by someone on Earth. Write it like it matters.	COACH / GROUP LEADER Approve Dispatches in Mission Control. After each one ask: “How would YOU apply this at school or at home?”
--	--

Mission 2 — tools

Point a phone camera at any code — the live tool opens. Each code is unique to its page.



Mission 2 — The Journey

5 cards + Deep Space gate
theforce.health/marstronaut/Marstronaut-Mission-2-The-Journey.html



Mission Control — Live

ISS tracker, APOD, rover photos
theforce.health/marstronaut/Marstronaut-Mission-Control-Live.html



Self-Reliance Skills Bingo

Medicine when there is no 911
theforce.health/marstronaut/Marstronaut-Self-Reliance-Skills-Bingo.html



LIVE It Trackers

Sleep, workouts, nutrition in transit
theforce.health/marstronaut/Marstronaut-Live-It-Trackers.html

Badge cards · Mission 2

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH

First Aid Badge

EMERGENCY FIRST RESPONSE

EARN BY	Complete a first aid course module covering bleeding control, wound care, tourniquet application, and assessing wound severity. Demonstrate knowledge through a scenario quiz. Optional: complete hands-on first aid practice activity for Drops.
UNLOCKS	Laceration Emergency event in Mission 2 (both Level 1 and Level 2 decisions). First Aid Kit supply pack purchase (discounted 40% with badge). Also gates laceration and broken bone response in Mission 3.
EARTH USE	Stopping bleeding at a sports event, hiking accident, school emergency, or car accident. One of the highest-impact skills anyone can have — cardiac arrest and uncontrolled bleeding are the two most preventable causes of premature death.
MUST KNOW	• How to apply direct pressure correctly — location, material, duration • Tourniquet application: when to use one, how to apply it, the 2-inch rule • Wound assessment: superficial vs. deep vs. penetrating — when to seek further care

Nutrition Badge

APPLIED NUTRITION & FOOD SAFETY

EARN BY	Complete lessons on: macronutrients and micronutrients, caloric needs under different conditions, oral rehydration science, food safety and storage, and foodborne illness recognition and management.
UNLOCKS	Food Poisoning event in Mission 2 (both decision levels). Food supply replenishment mechanics. Connects to food and water consumable management throughout Mission 2 and Mission 3.
EARTH USE	Food safety after a natural disaster, recognizing and managing food poisoning at home or in a community, understanding nutrition labels, making health-supporting food choices under resource constraints.
MUST KNOW	• Macronutrients: carbohydrates, proteins, fats — their roles and caloric values • Foodborne illness: common causes, onset timelines, symptoms, and when to escalate • Oral rehydration science: why electrolytes matter, not just fluids — sodium-glucose cotransport

Badge cards · Mission 2

Anatomy Badge

HUMAN ANATOMY & MUSCULOSKELETAL SYSTEM

EARN BY	Complete lessons on: the skeletal system, major bones and their functions, fracture types, the healing process, immobilization principles. Complete a bone identification activity.
UNLOCKS	Broken Bone event in Mission 2. Splint Kit supply pack purchase in Mission 2 and Mission 3. Connects to physical training understanding in Mission 1.
EARTH USE	Fracture recognition and immobilization as a first responder, coach, parent, or teacher. Understanding musculoskeletal injury in sports medicine, physical therapy, and occupational health careers.
MUST KNOW	• Major bones of the body and their structural roles: axial vs. appendicular skeleton • Types of fractures: closed vs. open, complete vs. incomplete, comminuted • Low-gravity physiology: why fractures in space require different considerations than on Earth

Mental Health Badge

MENTAL HEALTH FIRST AID & WELLBEING

EARN BY	Complete lessons on: recognizing mental health warning signs (depression, anxiety, isolation), mental health first aid principles (Ask, Listen, Connect), suicide prevention awareness, and when to escalate to professional support. Complete a scenario practice activity.
UNLOCKS	Psychological Crisis event in Mission 2. Isolation & Loneliness scenario in Mission 3. Grief & Loss scenario in Mission 3.
EARTH USE	Recognizing depression and burnout in a friend, classmate, family member, or colleague. Mental health first aid is now the most requested skill in workplaces and schools. Every student trained is a potential lifesaver.
MUST KNOW	• Warning signs of depression: persistent sadness, withdrawal, sleep changes, appetite changes, hopelessness • Warning signs of burnout: exhaustion, cynicism, reduced efficacy, physical symptoms • Mental health first aid: Ask (directly), Listen (without judgment), Connect (to resources and people)

Badge cards · Mission 2

Communication Badge

INTERPERSONAL COMMUNICATION & CONFLICT RESOLUTION

EARN BY	Complete lessons on: active listening, verbal and non-verbal communication, giving and receiving feedback, navigating difficult conversations, and the difference between intent and impact. Complete a communication scenario simulation.
UNLOCKS	Communication Breakdown event in Mission 3. Discussion & Vote resolution approach in Mission 3. Also earns Drops when used to transmit Earth Dispatches in Mission 2.
EARTH USE	Every professional environment cites communication as the most missing skill in new employees. Active listening, giving feedback, and navigating misunderstanding are foundational to nursing, teaching, management, law, medicine, and almost every other career.
MUST KNOW	• Active listening: paraphrase, reflect, ask open questions before responding • Non-verbal communication: how tone, body language, and silence communicate • Intent vs. impact: why someone can cause harm without meaning to, and why impact is what matters

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH

Worksheet · Earth Dispatch

NAME _____

CALL SIGN _____

DATE ____ / ____ / ____

TRANSMISSION HEADER

Week ____ of 32 · Distance from Earth _____ km · Signal delay ____ min · Event:

LEVEL 1 — WHAT WE DID ON THE SHIP

The problem · The options · The decision · The result

LEVEL 2 — THE LESSON FOR EARTH

Where does this same problem happen at home, at school, in our town? What should someone there know before it happens?

Mission Log · Mission 2

SOL _____

CALL SIGN _____

QUALITY OF THE DAY _____

Week 14. Someone on the crew has gone quiet. What did I notice, and what did I do?

The crisis that scared me most, and the badge that got us through it:

My best Earth Dispatch — one sentence I'm proud of:

Every real astronaut keeps a log. Coins for the Learn It, Drops for the Share It — and the Log is where the training becomes yours.

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH

A full-page background image of a Mars landscape. In the foreground, an astronaut in a white spacesuit stands with their back to the camera, looking out over a vast, reddish-brown desert. In the middle ground, there is a small rover and a large, white, dome-shaped habitat structure with a glass dome. To the right of the habitat, there are other smaller structures and a tall antenna. In the background, a large, conical volcano rises against a hazy, orange-tinted sky. The sun is visible on the left horizon, creating a warm, golden glow.

08

Mission 3 · Survive on Mars

“Survival isn't just engineering — it's caring for people and place at the same time, the hardest and most human skill there is. Pass this, and you've earned the name Marstronaut.”

— DR. ROB

IN THIS SECTION

- Five cards (5.1 → 5.5): environment, habitat, colony ops, Earth return
- Three colony build levels · consumables · medical and community emergencies
- Sim A5 — Colony Crisis, the final test

YOU WILL EARN

Empathy · Conflict Resolution ·
Sustainability & Earth Systems ·
Community Health & SDOH

Marstronaut

Build a home. Build a future. Build for everyone.

Phase 5: Survive on Mars — Build a Home. Build a Future. Build for Everyone. Everything you've learned — body systems, spacecraft systems, careers, teamwork, resilience — comes together now. You're building the first hu.....

5.1 • Mars Environment Science

Atmosphere 95% CO₂ at ~1% Earth pressure, -80°F average with 170°F daily swings, global dust storms, 38% gravity, no magnetic field. Live It: Mars Weather Report.

5.3 • Colony Operations

The first colony is built by the same careers that build communities on Earth: construction workers, electricians, plumbers, HVAC technicians, and every career family from all five phases. Live It: Mars Colony Mapping C...

5.5 • Colony Crisis — The Final Test (Simulation Gate)

Three layered crises: Habitat breach (micrometeorite cracks a seal), Medical emergency (crew member collapses), Communication blackout (solar conjunction). Resolve all three → CERTIFIED MARSTRONAUT™ and graduation.

TRAINEE

Gate to land: 900 Drops total, three or more Earth Dispatches sent, Biology and Civics badges plus everything from Missions 1 and 2.

5.2 • Habitat Systems

Your habitat is a spacecraft that sits on the ground: pressurized modules, regolith/water radiation shielding, ISRU (MOXIE O₂ from CO₂, water from ice, Sabatier fuel), power systems. Live It: Hydroponic Experiment.

5.4 • Earth Return — The Dual-Use Promise Fulfilled

Every Mars technology → Earth application → who benefits: ISRU → carbon capture; water extraction → purification for 780M+ people; habitat design and more. Live It: Mars-to-Earth Innovation Proposal.

COACH / GROUP LEADER

Suggested pacing: 6–8 periods, one Sol per session. The Colony Crisis is three layered emergencies at once — run it with roles assigned.

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH

THREE BUILD LEVELS

From unmanned outpost to closed loop

Level 1 — Pre-Habitation (Unmanned)

Unlocks: Mission 2 complete · Build: Solar power, Base shelter, Oxygen system, Water extractor, Radio & comms
Earth parallel: Infrastructure investment before a community can be inhabited — utilities, housing, communications

Level 2 — Early Habitation (Crew arrives)

Unlocks: Level 1 complete · Build: Each new Marstronaut arrival loads food, oxygen, and water consumables
Earth parallel: Emergency supply management; post-disaster resupply; refugee settlement support

Level 3 — Sustainable Settlement (Closed loop)

Unlocks: 2+ colonists present · Build: Greenhouse, Waste recycler, CO₂ scrubber, Seed vault
Earth parallel: Sustainable agriculture, water recycling, community food systems, circular economy

MEDICAL EMERGENCIES

Emergency	Badge	Supply pack	Earth parallel
Laceration	First Aid	First Aid Kit (bandages, tourniquet)	Wound care at sports events, schools, workplaces
Broken Bone	Anatomy	Splint Kit (rigid splints, wrap)	Fracture management by first responders, coaches, parents
Heat Exhaustion	Health & Body	Hydration Pack (electrolytes, cooling pads)	Heat illness in outdoor work, sports, summer community events

The hardest and most human skill

Scenario	Situation	Earth parallel	Approaches
Bullying & Exclusion	One colonist mocked and excluded; trust fracturing	Every school and workplace; power imbalance + bystander silence	Discussion & vote (ok), Mediation (best), Colony charter (structural)
Grief & Loss	Colonist received news of death on Earth; unable to function	Bereavement in schools and workplaces; knowing how to support, not fix	Discussion (ok), Mediation (best), Colony charter (poor — rules cannot cover grief)
Isolation & Loneliness	Colonist stopped joining meals; crew noticed but not acted	Depression/burnout warning signs; noticing and responding with curiosity	Discussion (ok), Mediation (best), Colony charter (poor — cannot legislate belonging)
Communication Breakdown	Two colonists misunderstood a critical task; work stalling	Workplace conflict from assumptions; intent vs. impact	Discussion (good), Mediation (best), Colony charter (structural fix only)

Three resolution approaches — **Discussion & vote** · **Mediation** · **Colony charter** — and the lesson that rules cannot cover grief and you cannot legislate belonging. Everything built on Mars comes back to help Earth: ISRU → carbon capture; water extraction → drought resilience; closed-loop food → community food systems.

🎵 Phase theme: *“Mission Control (Reach the Red)”*

TRAINEE

Watch what fails first in the Colony Builder. It is almost never the machinery.

COACH / GROUP LEADER

After community events ask: “Have you ever seen this happen in real life? What happened?”

Mission 3 — tools

Point a phone camera at any code — the live tool opens. Each code is unique to its page.



Mission 3 — Survive on Mars

5 cards + Colony Crisis gate
theforce.health/marstronaut/Marstronaut-Mission-3-Survive-On-Mars.html



Mission Control — Dashboard

Program view, 9 stations
theforce.health/marstronaut/Marstronaut-Mission-Control-Dashboard.html



Faith, Culture & Health Bingo

15 traditions · One Health
theforce.health/marstronaut/Marstronaut-Faith-Culture-Health-Bingo.html



26 Qualities Explorer

The wheel
theforce.health/marstronaut/Marstronaut-26-Qualities-Explorer.html

Badge cards · Mission 3

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH

Empathy Badge

SOCIAL-EMOTIONAL INTELLIGENCE

EARN BY	Complete lessons on: perspective-taking, emotional recognition in self and others, compassionate responding, cultural humility, and inclusion. Complete a perspective-taking simulation where students navigate a scenario from another person's point of view.
UNLOCKS	Bullying & Exclusion event in Mission 3 (required for any resolution approach). Grief & Loss event in Mission 3. Isolation & Loneliness event in Mission 3. Required for Mediation approach (alongside Conflict Resolution Badge).
EARTH USE	Social cohesion in any community: classroom, workplace, family, or neighborhood. Empathy is the foundational skill for nursing, teaching, social work, counseling, leadership, and medicine. It is consistently cited as the most valued and most missing quality in healthcare professionals.
MUST KNOW	- Cognitive vs. affective empathy: understanding another's perspective vs. feeling their emotion - Active perspective-taking: the practice of deliberately considering a situation from another viewpoint before responding - Emotional recognition: identifying emotions in others through verbal and non-verbal cues

Conflict Resolution Badge

MEDIATION & RESTORATIVE PRACTICE

EARN BY	Complete lessons on: types of conflict (values, resources, relationships, data), mediation principles, restorative justice frameworks, and negotiation fundamentals. Complete a peer mediation role-play simulation.
UNLOCKS	Mediation resolution approach in Mission 3 (all four community events). Required to unlock the consistently best-outcome resolution path. Carries a 30% coin discount on community event resolution when used.
EARTH USE	The single most in-demand soft skill in healthcare, legal, social services, HR, and management. Mediators, arbitrators, and conflict resolution specialists are among the fastest-growing professional categories. Every teacher, parent, and community leader uses these skills daily.
MUST KNOW	- Types of conflict: values conflicts (hardest to resolve), resource conflicts, relationship conflicts, data/information conflicts - Mediation principles: neutrality, confidentiality, voluntary participation, informed consent - The mediation process: opening, storytelling, problem identification, option generation, agreement

Badge cards · Mission 3

Sustainability & Earth Systems Badge

ENVIRONMENTAL SCIENCE & CLOSED-LOOP SYSTEMS

EARN BY	Complete lessons on: the water cycle, carbon cycle, nutrient cycles, waste-to-resource systems, sustainable agriculture, and closed-loop environmental design. Complete a systems design activity mapping inputs and outputs of a closed ecosystem.
UNLOCKS	Greenhouse (Level 3 colony) — requires this badge plus 160 Healthy Coins. CO ₂ Scrubber (Level 3 colony) — requires this badge plus 140 Healthy Coins. Waste Recycler (Level 3 colony) — requires this badge plus 130 Drops.
EARTH USE	Environmental science careers, sustainable agriculture, water treatment, waste management, urban planning, and climate science. Understanding closed-loop systems is foundational to every sustainability profession and to informed civic participation in environmental policy.
MUST KNOW	• The water cycle: evaporation, condensation, precipitation — and how human systems disrupt it • The carbon cycle: how CO₂ moves through atmosphere, plants, animals, and soil • Closed-loop vs. open-loop systems: why linear (take-make-dispose) is unsustainable

Community Health & SDOH Badge

PUBLIC HEALTH & SOCIAL DETERMINANTS OF HEALTH

EARN BY	Complete lessons on: the five social determinants of health (economic stability, education, healthcare access, neighborhood environment, social context), health equity, community health assessment, and the relationship between community conditions and individual health outcomes.
UNLOCKS	Medical Bay (Level 3 colony) — required plus 200 Healthy Coins. Unlocks the highest-tier medical infrastructure. Also deepens understanding of all community event resolutions in Mission 3 by connecting individual crises to systemic conditions.
EARTH USE	Public health, community health work, nursing, social work, health policy, urban planning, and civic leadership. Understanding SDOH is now required knowledge for every health professional and is increasingly central to corporate social responsibility, urban development, and education policy.
MUST KNOW	• The five SDOH domains: economic stability, education access, healthcare access, neighborhood & built environment, social & community context • How each SDOH domain maps onto colony survival: shelter (housing), water extraction (environment), food (economic stability), radio (social connection), medical bay (healthcare access) • Health equity: why equal treatment is not the same as equitable outcomes

Worksheet · Colony charter

NAME _____

CALL SIGN _____

DATE ____ / ____ / ____

OUR COLONY'S FIVE RULES

Write five rules a crew of eight could actually live by for a year. Test each one: does it cover grief? Does it create belonging, or only forbid harm?

RESOURCE BUDGET FOR ONE SOL

Water in ____ L · recycled ____ % · Power ____ kWh · Food ____ kg · Which one runs out first?

EARTH RETURN

One Mars technology → one Earth application → who benefits in my town:

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH

REFLECTION SHEET

Mission Log · Mission 3

SOL _____

CALL SIGN _____

QUALITY OF THE DAY _____

The community scenario that felt most like my real life:

Discussion, mediation, or charter — which did our crew reach for first, and was it right?

Colony Crisis debrief: what held, what broke, who stepped up?

I have earned the name Marstronaut. What does that mean on Earth?

Every real astronaut keeps a log. Coins for the Learn It, Drops for the Share It — and the Log is where the training becomes yours.

Faith, Culture & Health

“The crew will pray differently, eat differently, and grieve differently. The competency isn't knowing every rule. It's knowing to ask.”
— CHAPLAIN REV. TANYA MITCHELL

Fifteen Dr. Rob lessons open each tradition through the health lens — what it teaches, and one specific act of respect — on a 4×4 board with a One Health center square.

 Indigenous & Native American	 Hinduism	 Judaism
 Buddhism	 Christianity	 Islam
 Sikhism	 Jainism	 Taoism
 Confucianism	 Shinto	 Bahá'í Faith
 Rastafari	 African Traditional & Diaspora	 Secular & Humanist

Kosher and halal meals, Ramadan and the Bahá'í fast, gelatin capsules and ahimsa, sacred items never moved without permission. **The Marstronaut rule: ask, don't assume.**

TRAINEE

Start with the tradition you know least about. Teach one caregiver fact to someone this week.

COACH / GROUP LEADER

Companion to the GS-04 Humanities card and the Colony Community scenarios. Pair a square with: “What gives you strength and comfort?”



09

The Arsenal — boards, games & simulations

“Sixty collectible cards, four rarity tiers, and a prize wheel. Learning should feel like winning.”

— MARCUS

IN THIS SECTION

- Eleven bingo boards — every square a Learn It · Live It · Share It
- Four games
- Five simulation gates, one per column of the 5×5
- The Card Collection and the Spin4Rewards wheel
- Mission Health Rescue — the free arcade game

YOU WILL EARN

Coins on every square

Bingo lines · full-card badges

Collectible cards

Mission Specialist (arcade)



BINGO BOARD · GROUND SCHOOL · TIER 1

BASICS Bingo

The health-readiness board. Sixteen missions across nutrition, fitness, sleep, mental health, substance prevention, cardiovascular and bone health, vision, first aid, dental, hearing, environmental and immune health, relationships, academics and personal growth.

WHAT'S ON IT

- Mission Nutrition
- Mission Fitness
- Mission Sleep
- Mission Mental Health
- Mission Substance Prevention
- Mission Cardiovascular Health
- Mission Bone Health
- Mission Vision Health
- Mission First Aid
- Mission Dental Health
- Mission Hearing Health
- Mission Environmental Health
- Mission Immune Health
- Mission Healthy Relationships
- Mission Academic Excellence
- Mission Personal Growth



Open

theforce.health/marstronaut/Marstronaut-Basics-Bingo.html

TRAINEE

Start with Mission Sleep. It is the one most trainees are failing without knowing it.

COACH / GROUP LEADER

The Ground School health foundation; from the Vercel showcase. Runs stand-alone with no setup.

PLAY LOG

SQUARES EARNED ____ / ____ · LINES ____ · COINS ____ · DROPS ____ ·
DATE ____ / ____

What I learned · who I taught it to (the Share It):

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH



The twelve EVA systems as a 4×3 board, with the goniometer range-of-motion fitting lab. Completing the set earns the Astronaut ID + EVA Certificate.

WHAT'S ON IT

- Oxygen Supply
- CO2 Removal
- Temperature Control
- Humidity & Water
- Pressure Containment
- Helmet & Visor
- Gloves & Dexterity
- Mobility Joints
- EVA Jetpack (SAFER)
- Communications
- Radiation Shield
- Life Support Backpack (PLSS)



Open

theforce.health/marstronaut/Marstronaut-Spacesuit-Bingo.html

TRAINEE

Measure your own joints before you open the Mobility Joints square.

COACH / GROUP LEADER

Pair each system with its body-system twin – the analogy is the lesson.

PLAY LOG

SQUARES EARNED ____ / ____ · LINES ____ · COINS ____ · DROPS ____ ·
DATE ____ / ____

What I learned · who I taught it to (the Share It):



BINGO BOARD · FLIGHT SCHOOL

Space Bingo — know your universe

A 5×5 grid from the Sun to the whole Universe with an interactive solar-system visualizer, depth cards, quizzes and coin rewards. Activities include a solar observation, a Mars gravity simulator, a lunar phase tracker, finding the Milky Way and a cosmic scale model.

WHAT'S ON IT

- The Sun
- Mercury
- Venus
- Earth
- Mars
- The Moon
- Jupiter
- Saturn
- Uranus
- Neptune
- Asteroid Belt
- Comets & Meteors
- Dwarf Planets
- The Kuiper Belt
- Exoplanets
- Stars & Constellations
- Black Holes
- Nebulae
- The Milky Way
- Cosmic Radiation
- Space-Time & Gravity
- Dark Matter & Dark Energy
- The Big Bang
- The Universe
- Humanity in Space



Open

theforce.health/marstronaut/Marstronaut-Space-Bingo.html

TRAINEE

Do the Cosmic Scale Model outdoors — it takes a whole field.

COACH / GROUP LEADER

Twenty-five squares make a clean five-week rotation: one row per week.

PLAY LOG

SQUARES EARNED ____ / ____ · LINES ____ · ⚙ COINS ____ · 💧 DROPS ____ ·
DATE ____ / ____

What I learned · who I taught it to (the Share It):

- START
- GROUND
- SUIT UP
- FLIGHT
- CAREERS
- MISSION 1
- MISSION 2
- MISSION 3
- ARSENAL
- GRAD
- COACH

BINGO BOARD · FLIGHT SCHOOL

Instrumentation Bingo — 16 systems

Every spacecraft runs on systems the way your body runs on organ systems. Sixteen essentials — IMU, RCS, ECLSS, GN&C, EVA, TPS and more — in Navigation, Protection, Science and Operations rows and Alpha-Delta columns, with share-with-family, social and teacher options.

WHAT'S ON IT

Inertial Measurement Unit Reaction Control System

Environmental Control Telemetry System Docking Mechanism

Space Suit (EMU) Guidance, Navigation & Control Heat Shield

Star Tracker Propulsion System Radiation Dosimeter

Hydroponic Growth System EVA Operations

Teleoperation Console Pressure Hatch / Airlock

Crew Resource Management



Open

theforce.health/marstronaut/Flight-School/instrumentation-bingo.html

TRAINEE

ECLSS is your lungs and kidneys; the IMU is your inner ear. Find the twin for every square.

COACH / GROUP LEADER

Card 2.2 companion. Ascent and Descent diagonal patterns make good small-group challenges.

PLAY LOG

SQUARES EARNED ____ / ____ · LINES ____ · ⚙️ COINS ____ · 💧 DROPS ____ ·
DATE ____ / ____

What I learned · who I taught it to (the Share It):

History of Flight Bingo — 16 pioneers

Sixteen people who made the stars reachable, from the Montgolfier brothers and Tsiolkovsky to Bessie Coleman, the Tuskegee Airmen, Katherine Johnson, Mae Jemison and the Inspiration4 crew — real images, quiz gates, and collectible PDF trading cards.

WHAT'S ON IT

Montgolfier Brothers Konstantin Tsiolkovsky Wright Brothers

Bessie Coleman Robert Goddard Amelia Earhart

Frank Whittle Tuskegee Airmen Chuck Yeager

Katherine Johnson Valentina Tereshkova Sally Ride

Mae Jemison Wally Funk Samantha Cristoforetti

Inspiration4 Crew



Open

theforce.health/marstronaut/Flight-School/history-of-flight-bingo.html

TRAINEE

Print the trading card for the pioneer whose story surprised you most.

COACH / GROUP LEADER

Full-board completion prints a card set. Use it as the reward for the Flight School Pause & Reflect.

PLAY LOG

SQUARES EARNED ____ / ____ · LINES ____ · ⚙️ COINS ____ · 💧 DROPS ____ ·
DATE ____ / ____

What I learned · who I taught it to (the Share It):



A 4×3 board of twelve Vimeo career videos — exercise physiologists, space medicine, biomedical engineers, nutrition scientists, radiobiologists, telemedicine, behavioral health, epidemiologists, pharmacologists, occupational health — plus a welcome and a conclusion. Each with Learn It · Live It · Share It.

WHAT'S ON IT

Welcome to Health Careers

Exercise Physiologists

Space Medicine

Biomedical Engineers

Nutrition Scientists

Radiobiologists

Telemedicine Specialists

Behavioral Health

Epidemiologists

Pharmacologists

Occupational Health

Your Health Career Path



Open

theforce.health/marstronaut/Ma
rstronaut-Health-Careers-Bing
o.html

TRAINEE

Watch one video, then find that career's twin in your own town's hospital.

COACH / GROUP LEADER

Ten careers in twelve short videos — one class period if you play two per session.

PLAY LOG

SQUARES EARNED ____ / ____ · LINES ____ · ⚙️ COINS ____ · 💧 DROPS ____ ·
DATE ____ / ____

What I learned · who I taught it to (the Share It):



BINGO BOARD · CAREERS

STEM Careers for Mars

“Top 10 careers that will get us to Mars” — aerospace engineers, astrophysicists, astrobiologists, planetary geologists, roboticists, space medicine, software and data, spacecraft designers, comms and media — ending on Your Dream Career.

WHAT'S ON IT

- Welcome to Mars Careers
- Aerospace Engineers
- Astrophysicists
- Astrobiologists
- Planetary Geologists
- Roboticists
- Space Medicine Specialists
- Software & Data Scientists
- Spacecraft Designers
- Comms & Media Specialists
- Your Mars Career Path
- Your Dream Career



Open

theforce.health/marstronaut/Ma
rstronaut-STEM-Careers-Bingo.h
tml

TRAINEE

Your Dream Career is the last square on purpose. Write it down before you open it.

COACH / GROUP LEADER

Pairs with the Career Compass retake at the end of the phase.

PLAY LOG

SQUARES EARNED ____ / ____ · LINES ____ ·  COINS ____ ·  DROPS ____ ·
DATE ____ / ____

What I learned · who I taught it to (the Share It):

BINGO BOARD · CAREERS · MISSION 2

Self-Reliance Skills — medicine when there is no 911

“Top 10 skills for self-reliant medical care on Mars” — wound care, burns, fractures, IV therapy, medication and pharmacy, psychological first aid, dental emergencies, infections, telemedicine, BLS. Emergency medical training for Mars survival, useful on Earth tomorrow.

WHAT'S ON IT

Self-Reliant Medical Care: Introduction

Wound Care

Burns

Fractures

IV Therapy

Medication & Pharmacy

Psychological First Aid

Dental Emergencies

Infections

Medical Tech & Telemedicine

BLS — Basic Life Support

Self-Reliance Mastery



Open

theforce.health/marstronaut/Ma
rstronaut-Self-Reliance-Skills
-Bingo.html

TRAINEE

Ask an adult you trust which of these ten they could actually do. Then ask yourself.

COACH / GROUP LEADER

Ties directly to the First Aid, Anatomy and Mental Health badges that gate Mission 2 events.

PLAY LOG

SQUARES EARNED ____ / ____ · LINES ____ · ⚙ COINS ____ · 💧 DROPS ____ ·
DATE ____ / ____

What I learned · who I taught it to (the Share It):



BINGO BOARD · CAREERS · TIER 2

AMBASSADORS Career Bingo

The Tier 2 career board: sixteen space and health careers from aerospace engineer and flight surgeon to space agriculture, data science and advanced EMT — with lesson plans and a Teacher's Guide (grades 5–12, 45 minutes, Health/Science/CTE).

WHAT'S ON IT

- Aerospace Engineer
- Flight Surgeon
- Space Systems Tech
- Robotics Engineer
- Environmental Systems Eng.
- Aerospace Welder
- Aerospace Physiologist
- Mission Control Specialist
- Astrobiologist
- Radiation Safety Specialist
- Aerospace Software Eng.
- Space Agriculture Specialist
- Materials Scientist
- Advanced EMT / Paramedic
- Data Scientist
- Systems Integration Eng.



Open

theforce.health/marstronaut/Marstronaut-Ambassadors-Bingo.html

TRAINEE

An Ambassador has finished Ground School and Flight School. This board is the badge of that rung.

COACH / GROUP LEADER

Ships with the fullest lesson plan of any board. Use it for the first guest-speaker day.

PLAY LOG

SQUARES EARNED ____ / ____ · LINES ____ · ⚙️ COINS ____ · 💧 DROPS ____ ·
DATE ____ / ____

What I learned · who I taught it to (the Share It):

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH



BINGO BOARD · ONE HEALTH + HUMANITIES

Faith, Culture & Health Bingo

Fifteen traditions and a One Health center square, each opening one faith through the health lens with a Dr. Rob lesson, a quiz, a Live It and a Share It. Full card earns the Cultural Competency badge.

WHAT'S ON IT

- Indigenous & Native American
- Hinduism
- Judaism
- Buddhism
- Christianity
- One Health ★
- Islam
- Sikhism
- Jainism
- Taoism
- Confucianism
- Shinto
- Bahá'í Faith
- Rastafari
- African Traditional & Diaspora
- Secular & Humanist



Open

theforce.health/marstronaut/Marstronaut-Faith-Culture-Health-Bingo.html

TRAINEE

Start with the tradition you know least about.

COACH / GROUP LEADER

The Marstronaut rule on every square: ask, don't assume. Pair with the Chaplain guide.

PLAY LOG

SQUARES EARNED ____ / ____ · LINES ____ · ⚙ COINS ____ · 💧 DROPS ____ ·
DATE ____ / ____

What I learned · who I taught it to (the Share It):



BINGO BOARDS · GROUND SCHOOL UNITS

Forces Bingo · Body Physics Bingo

Two 5×5 Share It boards that close the companion units: Forces That Shape Everything (24 challenges — hula hoops, slingshots, orbits, human orbits) and Your Body Is a Physics Lab (24 challenges — roller coasters, basketball, running, jumping). Both live inside their unit pages.

WHAT'S ON IT

- Forces Bingo — 24 Share It challenges + free square
- Body Physics Bingo — 24 challenges
- Sports & Rides Unit: [Marstronaut-Sports-Rides-Unit.html](#)



Open

theforce.health/marstronaut/Marstronaut-Maria-Forces-Unit.html

TRAINEE

Every square is a Share It: you have to show someone, not just tell them.

COACH / GROUP LEADER

Both units carry lesson plans with NGSS, CC Math, CASEL and SHAPE tags.

PLAY LOG

SQUARES EARNED ____ / ____ · LINES ____ · COINS ____ · DROPS ____ ·
DATE ____ / ____

What I learned · who I taught it to (the Share It):

GAME · MISSION⁷1

Artemis Rocket Assembly Builder

Assemble NASA's Artemis SLS component by component. Each of six stages has Learn text, Careers at This Stage, flashcards and a three-question quiz gate before you may install it. Six stages → ignition sequence → “Your SLS is ready for Mars.”

WHAT'S ON IT

01 Mobile Launcher & Launch Pad — The foundation that holds it all

02 Solid Rocket Boosters — 75% of liftoff thrust

03 Core Stage (The Backbone) — 212-foot orange powerhouse

04 Interim Cryogenic Propulsion Stage — The final push beyond Earth

05 Orion Spacecraft + Service Module — Crew capsule for 4 astronauts

06 Launch Abort System + Fairings — Emergency escape and protection



Open

theforce.health/marstronaut/Mission-1/rocket-assembly-builder.html

TRAINEE

Build it once for fun, then once for the badge.

COACH / GROUP LEADER

The quiz gates are the Learn It. Three careers per stage — eighteen in the game.

PLAY LOG

SQUARES EARNED ____ / ____ · LINES ____ · ⚙️ COINS ____ · 💧 DROPS ____ ·
DATE ____ / ____

What I learned · who I taught it to (the Share It):



GAME · MISSION 3

Mars Colony Builder

Free-play the colony: solar power, shelter, oxygen, water extraction and comms at Level 1; consumables as colonists arrive at Level 2; greenhouse, waste recycler, CO₂ scrubber and seed vault at Level 3. Watch what fails first.

WHAT'S ON IT

Level 1 — Pre-Habitation (Unmanned)

Level 2 — Early Habitation (Crew arrives)

Level 3 — Sustainable Settlement (Closed loop)



Open

theforce.health/marstronaut/Marstronaut-Mission-3-Survive-On-Mars.html

TRAINEE

It is almost never the machinery that fails first.

COACH / GROUP LEADER

Runs inside the Mission 3 hub. Assign roles before free-play: power, water, food, people.

PLAY LOG

SQUARES EARNED ____ / ____ · LINES ____ · ⚙ COINS ____ · 💧 DROPS ____ ·
DATE ____ / ____

What I learned · who I taught it to (the Share It):

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH

GAME · FLIGHT SCHOOL

Space History Gallery

A walk through the eras of flight and spaceflight — balloon, propeller, jet, rocket — that feeds the Flight Simulator and the History of Flight board. Real images, real dates, real people.

WHAT'S ON IT

Lighter than air

Propeller age

Jet age

Rocket age

Mercury → Gemini → Apollo → Shuttle → Artemis



Open

theforce.health/marstronaut/Ma
rstronaut-Flight-School.html

TRAINEE

Find the year you were born on the timeline.
What was flying?

COACH / GROUP LEADER

Lives with the Flight School hub; use it as the
opener for Card 2.1.

PLAY LOG

SQUARES EARNED ____ / ____ · LINES ____ ·  COINS ____ ·  DROPS ____ ·
DATE ____ / ____

What I learned · who I taught it to (the Share It):



GAME · CROSS-PROGRAM

Category Quest

A fast category-sorting game built with the FFH Game Maker: drop each item into its Marstronaut category before the clock runs out. Coins for accuracy, bonus for streaks.

WHAT'S ON IT

Planets · Rockets · Missions · Pioneers · Careers · Achievements



Open

theforce.health/ffh-marstronaut-category-quest/

TRAINEE

Play it once slow, then once for speed.

COACH / GROUP LEADER

Good warm-up for any session; two minutes, no setup.

PLAY LOG

SQUARES EARNED ____ / ____ · LINES ____ ·  COINS ____ ·  DROPS ____ ·
DATE ____ / ____

What I learned · who I taught it to (the Share It):



SIMULATION GATE · A1 · GROUND SCHOOL

Sim A1 — Ground School Gate

The end of Column One: a Jeopardy-style review of Ground School content, then a personal-health crisis — a crew member collapses and the team's reliability is tested. Pass it and Flight School unlocks.

WHAT'S ON IT

Review: what you know

What the simulation expects

Pre-simulation mindset check

Jeopardy round

Health-crisis scenario



Open

theforce.health/marstronaut/Marstronaut-Ground-School.html

TRAINEE

Fill your Mission Log before the gate; the review draws on it.

COACH / GROUP LEADER

Run as a live event: teams of four, a Group Leader as flight director.

PLAY LOG

SQUARES EARNED ____ / ____ · LINES ____ · ⚙️ COINS ____ · 💧 DROPS ____ ·
DATE ____ / ____

What I learned · who I taught it to (the Share It):

SIMULATION GATE · A2 · FLIGHT SCHOOL

Sim A2 — Navigation Crisis

Three crisis layers: a navigation calculation error (the Mars Climate Orbiter lesson — units matter), a communication problem, and a decision under time pressure. Pass it and Mission 1 unlocks.

WHAT'S ON IT

Layer 1 — calculation error (units)

Layer 2 — communication breakdown

Layer 3 — decision under time pressure



Open

theforce.health/marstronaut/Marstronaut-Flight-School.html

TRAINEE

Check your units. Then check them again.

COACH / GROUP LEADER

Card 2.5. Debrief with the Critical Thinking lenses: Reality, Values, Scope, Consequence.

PLAY LOG

SQUARES EARNED ____ / ____ · LINES ____ · ⚙️ COINS ____ · 💧 DROPS ____ ·
DATE ____ / ____

What I learned · who I taught it to (the Share It):

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH



SIMULATION GATE · A3 · MISSION 1

Sim A3 — Launch Control

Three layered crises on the pad: a weather hold with launch-window math, a sensor anomaly (SRB segment temperature), and the go/no-go call. Launch clearance is earned here.

WHAT'S ON IT

- Weather hold — launch-window math
- Sensor anomaly — SRB segment 3 temperature
- Go / no-go poll



Open

theforce.health/marstronaut/Ma
rstronaut-Mission-1-Build-The-
Rocket.html

TRAINEE

Say the numbers out loud before you vote.

COACH / GROUP LEADER

Card 3.5. Assign console roles — weather, booster, flight director.

PLAY LOG

SQUARES EARNED ____ / ____ · LINES ____ · ⚙ COINS ____ · 💧 DROPS ____ ·
DATE ____ / ____

What I learned · who I taught it to (the Share It):

SIMULATION GATE · A4 · MISSION 2

Sim A4 — Deep Space Emergency (Apollo 13)

Day 147 of 210, a 12.5-minute signal delay, and three crises at once: a solar storm with thirty minutes to shelter, a life-support fault, and a crew under strain. Improvise with what is on board.

WHAT'S ON IT

Solar storm — 30 minutes to shelter

Life-support fault

Crew under strain

12.5-minute comms delay



Open

theforce.health/marstronaut/Marstronaut-Mission-2-The-Journey.html

TRAINEE

You cannot wait for Earth to answer. Decide, then transmit.

COACH / GROUP LEADER

Card 4.5. The Earth Dispatch after this gate is the best writing sample of the program.

PLAY LOG

SQUARES EARNED ____ / ____ · LINES ____ · ⚙ COINS ____ · 💧 DROPS ____ ·
DATE ____ / ____

What I learned · who I taught it to (the Share It):

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH



The final test: a habitat breach from a micrometeorite, a medical emergency, and a community crisis, layered. Four status gauges — life support, greenhouse, water, crew morale — and a young commander making the call.

WHAT'S ON IT

- Habitat breach — seal cracked
- Medical emergency
- Community crisis
- Gauges: life support · greenhouse · water · morale



Open

theforce.health/marstronaut/Marstronaut-Mission-3-Survive-On-Mars.html

TRAINEE

Pass this and you have earned the name Marstronaut.

COACH / GROUP LEADER

Card 5.5. Roles assigned, one Sol, then the Graduation Debrief.

PLAY LOG

SQUARES EARNED ____ / ____ · LINES ____ · ⚙ COINS ____ · 💧 DROPS ____ ·
DATE ____ / ____

What I learned · who I taught it to (the Share It):

COLLECT

Card Collection & Spin4Rewards

Sixty collectible trading cards in six categories — Planets, Rockets, Missions, Pioneers, Careers, Achievements — across four rarities (Common, Uncommon, Rare, Legendary), with flip-animation detail cards and the Spin4Rewards prize wheel (+50 Coins, Double XP, Launch Ticket).

WHAT'S ON IT

Planets (10)

Rockets (10)

Missions (10)

Pioneers (10)

Careers (10)

Achievements (10)

Rarities: Common · Uncommon · Rare · Legendary



Open

theforce.health/marstronaut/Marstronaut-Card-Collection.html

TRAINEE

A Legendary card is rarer than a full bingo card. Trade wisely.

COACH / GROUP LEADER

Cards are the reward layer across every board; the album shows a trainee's whole journey at a glance.

PLAY LOG

SQUARES EARNED ____ / ____ · LINES ____ · ⚙️ COINS ____ · 💧 DROPS ____ ·
DATE ____ / ____

What I learned · who I taught it to (the Share It):

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH

ARCADE · REALITY HEALTH GAME

Mission Health Rescue

The free arcade game on the Marstronaut channel: gobble the good, dodge the hazards, grab a power-up. Six levels — Fuel for Space, Body Systems, Mind & Sleep, Protect & Prevent, Senses & Planet, Space Readiness — each with a knowledge check. Clear all six for the Mission Specialist badge.

WHAT'S ON IT

Fuel for Space

Body Systems

Mind & Sleep

Protect & Prevent

Senses & Planet

Space Readiness



Open

theforce.health/marstronaut/index.html

TRAINEE

No sign-up needed to try. Coins are saved for members.

COACH / GROUP LEADER

Lucy's original Marstronaut channel game — the on-ramp for anyone who has not enrolled yet.

PLAY LOG

SQUARES EARNED ____ / ____ · LINES ____ · ⚙️ COINS ____ · 💧 DROPS ____ ·
DATE ____ / ____

What I learned · who I taught it to (the Share It):



10

Graduation & Debrief — your ticker-tape parade

“Whether or not you ever go to Mars, you are already a Force for Health. Take your bow, Marstronaut. Then go make both worlds better.”

— COACH LUCY

IN THIS SECTION

- Mission summary printed from Mission Control
- Read one Earth Dispatch aloud
- Certificate of Completion
- Next rung: Ambassador → Group Leader

YOU WILL EARN

Certificate of Completion — signed by
Dr. Robert Gillio, CMO

Alumni Network

Ambassador eligibility

START

GROUND

SUIT UP

FLIGHT

MISSION 1 CAREERS

MISSION 2

MISSION 3

MISSION 4

MISSION 5

MISSION 6

MISSION 7

MISSION 8

MISSION 9

MISSION COMPLETE

What you now know

When astronauts came home, New York threw shredded paper out of every window; John Glenn's parade in 1962 drew four million people. The debrief is that parade.

MISSION SUMMARY FIELDS

Phases Completed (5/5)

Cards Mastered (25/25)

Simulations Survived

Cards Collected

Coins Earned

Teamwork Coins

Mission Log Entries

Career Interest

Days in Training

WHAT THE GRADUATE CAN DO

- You can explain how a rocket works — and build one.
- You can calculate orbital mechanics — and ask for help when stuck.
- You can manage a crew through 32 weeks of isolation — because you've lived through lockdowns, dorms, and family reunions.
- You can build and sustain a colony on Mars — managing water, power, food, and human conflict.
- You can identify 60+ real careers in space, health, and STEM.
- You understand that YOUR health IS Earth's health.

CERTIFICATE OF COMPLETION — recognized as a MARSTRONAUT: a health-promoting citizen capable of representing humanity, whether on Mars or on Spaceship Earth. Signed Dr. Robert Gillio, CMO.

🎵 Capstone theme: *“Force for Health (Mission Complete)”*

TRAINEE

Graduates are eligible for the Ambassador tier — and Ambassadors become Group Leaders who mentor the next cohort. The ladder is real.

COACH / GROUP LEADER

Hold it as an event. Invite families and sponsors. A graduate reading their own Earth Dispatch is the best demonstration of the program there is.

Graduation — tools

Point a phone camera at any code — the live tool opens. Each code is unique to its page.



Graduation Debrief

Mission summary + certificate

theforce.health/marstronaut/Marstronaut-Graduation-Debrief.html



Astronaut ID

Your credential

theforce.health/marstronaut/Marstronaut-Astronaut-ID-Preview.html



Card Collection

60 cards, prize wheel

theforce.health/marstronaut/Marstronaut-Card-Collection.html



Recruitment page

Bring the next crew

theforce.health/marstronaut/Marstronaut-Recruitment-Public.html

Mission Log · Final transmission

SOL _____

CALL SIGN _____

QUALITY OF THE DAY _____

The person who started this training is not the person crossing the line. What changed?

Sixty careers. The one I am going to look into first:

My health is Earth's health. One habit I am keeping:

To the next trainee: one sentence of advice.

Every real astronaut keeps a log. Coins for the Learn It, Drops for the Share It — and the Log is where the training becomes yours.



11

Coach's Corner — running a chapter

“Every single thing learned for Mars has an immediate, explicit Earth application. Ask students to reflect on the compass question at the start and end of every session.”

— DR. ROB

IN THIS SECTION

- Pacing by phase
- Group Leader powers in Mission Control
- Discussion prompts
- Badge gates and standards

YOU WILL EARN

Group Leader rung of the ladder

Pacing & powers

Built for grades 6–12 with a workforce extension; runs online or in person. A chapter is about 25 trainees and one Group Leader.

SUGGESTED PACING

- **Orientation + Compass** — one session.
- **Ground School** — 3–5 sessions plus the Gate; ~12–20 trainee hours.
- **Suit Up / Build Your Body** — 2–3 sessions, or interleaved with Card 1.1.
- **Flight School** — 3–5 sessions plus Navigation Crisis.
- **Career Training** — 2 sessions plus guests.
- **Mission 1** — 3–4 periods · **Mission 2** — 5–6 · **Mission 3** — 6–8.
- **Daily Quality** — sixty seconds, every session.

GROUP LEADER POWERS (MISSION CONTROL)

- Trigger any crisis event manually as a discussion prompt.
- Review and approve Earth Dispatches — the Share It writing assessment.
- Award badges for activity, service or demonstrated skill outside the simulation.
- See every trainee's progress, currency and active events at a glance; schedule the Daily Quality feed for the cohort.

DISCUSSION PROMPTS

After a Dispatch: “How would YOU apply this at school or at home?” · After a community event: “Have you ever seen this happen in real life?” · After a medical event: “Why does it matter to know first aid before an emergency?” · Every session: “What did you do today to make someone's world a little better?”

Standards & the 5×5 board

Every artifact is reviewed against these frameworks; the full cross-walk is the Program Standards Map.

NHES	SHAPE AMERICA	
CTE NATIONAL CAREER CLUSTERS / CAREER READY PRACTICES		
AZ CTE / ECTE	NGSS	ISTE STANDARDS FOR STUDENTS
COMMON CORE MATH	COMMON CORE ELA	CASEL SEL
NASA ACR	SOCIAL DETERMINANTS OF HEALTH FRAMEWORK	
NEXT GEN CIVIC / HEALTH ED STANDARDS		

THE 5×5 BOARD — 25 CARDS

	Ground School	Flight School	Build the Rocket	The Journey	Survive on Mars
Concepts	Body = Spacecraft	Space Physics	Rocket Engineering	Transit Science	Mars Environment
Skills	Health Skills	16 Systems	Systems Integration	Crew Systems	Habitat Systems
Careers	Career Compass	Career Spectrum	Launch Team	Mission Ops	Colony Ops
One Health + Humanities	Humanities	Innovation	Eng for Everyone	Human Factor	Earth Return
Simulation Gate	A1 Jeopardy + Crisis	A2 Nav Crisis	A3 Launch Control	A4 Deep Space	A5 Colony Crisis

Marstronaut is enrichment: it runs alongside adopted courses rather than replacing them.

The 26 Astronaut Qualities

NASA selects for more than test scores. Each quality has a daily quote, tip and action, and three real people who embody it (Good · Better · Best speakers). Five clusters:

SCIENCE & SYSTEMS

Scientific Curiosity

Systems Thinking

Data Literacy

Engineering Mindset

Wonder & Awe

Problem-Finding

The Will to Explore

HEALTH & BODY

Physical Resilience

Health Advocacy

Medical Readiness

MIND & CHARACTER

Collaboration Under Pressure

Psychological Resilience

Empathy

Lifelong Learning

Energy & Initiative

Adaptability

Purpose & Meaning

COMMUNITY & CIVIC

Environmental Stewardship

Ethical Reasoning

Cultural Competency

Conflict Resolution

Sustainability Thinking

Service & Contribution

Civic Responsibility

COMMUNICATION & ART

Communication

Creative Expression

Schedule the feed for your cohort in the Qualities Manager. Sixty seconds at the top of every meeting is the SEL spine of the program.

Trackers, cards & the daily loop

LIVE IT TRACKERS — 11

- Overview — connected health apps (Apple Health, Google Fit,
- Workouts — Exercise Library (filter by body part/equipment)
- Nutrition — calorie and macro (carbs/protein/fat/fiber) budg
- Challenges — community challenge (e.g., Move Every Day in Mar
- Weight — weight history log, goal weight + target date, e
- BMI — imperial/metric calculator with scale and histor
- Pain — log by body location, level 0–10, type (aching,
- Treatment — log treatments by category (medication, physical
- Screen Time — daily limit goal, top apps by category, pickups
- Reactions — personal product library, reaction products, ing
- Serve It — log service and donations (volunteer time, dolla

CARD COLLECTION

Sixty collectible cards in six categories — Planets, Rockets, Missions, Pioneers, Careers, Achievements — across four rarities (Common, Uncommon, Rare, Legendary), with the Spin4Rewards prize wheel.

Coach — tools

Point a phone camera at any code — the live tool opens. Each code is unique to its page.



Mission Control — Interior

Trainee home base · Group
Leader view

theforce.health/marstronaut/Marstronaut-Mission-Control-Interior.html



Mission Control — Dashboard

Program view

theforce.health/marstronaut/Marstronaut-Mission-Control-Dashboard.html



Program Dashboard

5×5 status

theforce.health/marstronaut/Marstronaut-Program-Dashboard.html



Program Standards Map

Full cross-walk

theforce.health/marstronaut/Marstronaut-Program-Standards-Map.html



Qualities Manager

Schedule the daily feed

theforce.health/marstronaut/Marstronaut-Qualities.html



Cross-Disciplinary Positioning

For administrators

theforce.health/marstronaut/Marstronaut-Cross-Disciplinary-Positioning.html



Executive Summary

One page for leadership

theforce.health/marstronaut/Marstronaut-Executive-Summary.html



Mission Health Rescue

Free arcade game · Mission
Specialist badge

theforce.health/marstronaut/index.html



Mission Handbook (brief)

This book's short edition

theforce.health/marstronaut-flipbook/



Tool directory

All tools live at <https://theforce.health/marstronaut/>.

START

Welcome Center

Orientation

Career Compass

Learner Portal

Daily Quality

BODY & HEALTH

Vehicle Assembly Building

LIVE It Trackers

26 Qualities Explorer

Astronaut ID

BOARDS & GAMES

BASICS

Spacesuit

Space

Instrumentation

History of Flight

Health Careers

STEM Careers

Self-Reliance Skills

Ambassadors

Faith, Culture & Health

Card Collection

Rocket Assembly Builder

Flight Simulator

PHASE HUBS

Ground School

Flight School

Mission 1

Mission 2

Mission 3

Graduation

CAREERS

Career Ambassador

Pre-Apprentice Pathway

Mars Career Thread

Interview Coach

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH

How to start a chapter

Trainees — no sign-up is needed to try the games. Create a free Training ID at the Welcome Center to start earning coins, Drops and badges that follow you through the program.

Schools, clubs and families — a chapter is roughly 25 trainees with one Group Leader, online or in person, with Group Leader training built into the same ladder trainees climb.

Sponsors and partners — sponsors fund seats, never content. Scholarship seats are administered through The Force for Health® Network's 501(c)(3) fiscal agent; chapter sponsorships can be met partly in-kind or through scholarships.

Lucy Howell CEO · The Force for Health® Network	Dr. Robert Gillio Co-Founder · Chief Medical Officer	theforceforhealth.com theforce.health/marstronaut
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Chapter roster

One chapter ≈ 25 trainees and one Group Leader. Keep this sheet with the gate sign-offs; it is the paper record behind Mission Control.

#	Trainee	Call sign	Training ID	Compass Top 3	Ambassador
1					☐
2					☐
3					☐
4					☐
5					☐
6					☐
7					☐
8					☐
9					☐
10					☐
11					☐
12					☐
13					☐
14					☐
15					☐
16					☐
17					☐
18					☐
19					☐
20					☐
21					☐
22					☐
23					☐
24					☐
25					☐

GROUP LEADER _____ · CHAPTER / SCHOOL _____ ·

COHORT START ____ / ____ / _____

START

GROUND

SUIT UP

FLIGHT

CAREERS

MISSION 1

MISSION 2

MISSION 3

ARSENAL

GRAD

COACH

Ground School Gate

A1

Jeopardy + Crisis sim

Required to pass: Ground School badge

Run the gate as a live event — teams of four, one Group Leader as flight director. Initial each trainee who passes; record the date and any badge awarded outside the simulation.

#	Trainee	Badges in hand	Gate passed	Date	GL initials
1			☐		
2			☐		
3			☐		
4			☐		
5			☐		
6			☐		
7			☐		
8			☐		
9			☐		
10			☐		
11			☐		
12			☐		
13			☐		
14			☐		
15			☐		
16			☐		
17			☐		
18			☐		
19			☐		
20			☐		
21			☐		
22			☐		
23			☐		
24			☐		
25			☐		

TEAMS: A _____ B _____ C _____ D _____ E _____ F _____ · DEBRIEF PROMPT: “What did the crisis reveal about our team?”

Flight School Gate

A2

Navigation Crisis

Required to pass: Flight School wings

Run the gate as a live event — teams of four, one Group Leader as flight director. Initial each trainee who passes; record the date and any badge awarded outside the simulation.

#	Trainee	Badges in hand	Gate passed	Date	GL initials
1			☐		
2			☐		
3			☐		
4			☐		
5			☐		
6			☐		
7			☐		
8			☐		
9			☐		
10			☐		
11			☐		
12			☐		
13			☐		
14			☐		
15			☐		
16			☐		
17			☐		
18			☐		
19			☐		
20			☐		
21			☐		
22			☐		
23			☐		
24			☐		
25			☐		

TEAMS: A _____ B _____ C _____ D _____ E _____ F _____ · DEBRIEF PROMPT: “What did the crisis reveal about our team?”

Mission 1 Gate

A3

Launch Control

Required to pass: Physics · Chemistry · Engineering · Math

Run the gate as a live event — teams of four, one Group Leader as flight director. Initial each trainee who passes; record the date and any badge awarded outside the simulation.

#	Trainee	Badges in hand	Gate passed	Date	GL initials
1			☐		
2			☐		
3			☐		
4			☐		
5			☐		
6			☐		
7			☐		
8			☐		
9			☐		
10			☐		
11			☐		
12			☐		
13			☐		
14			☐		
15			☐		
16			☐		
17			☐		
18			☐		
19			☐		
20			☐		
21			☐		
22			☐		
23			☐		
24			☐		
25			☐		

TEAMS: A _____ B _____ C _____ D _____ E _____ F _____ · DEBRIEF PROMPT: “What did the crisis reveal about our team?”

Mission 2 Gate

A4 Deep Space Emergency (Apollo 13)

Required to pass: Nutrition · Anatomy · Communication · First Aid · Mental Health

Run the gate as a live event — teams of four, one Group Leader as flight director. Initial each trainee who passes; record the date and any badge awarded outside the simulation.

#	Trainee	Badges in hand	Gate passed	Date	GL initials
1			☐		
2			☐		
3			☐		
4			☐		
5			☐		
6			☐		
7			☐		
8			☐		
9			☐		
10			☐		
11			☐		
12			☐		
13			☐		
14			☐		
15			☐		
16			☐		
17			☐		
18			☐		
19			☐		
20			☐		
21			☐		
22			☐		
23			☐		
24			☐		
25			☐		

TEAMS: A _____ B _____ C _____ D _____ E _____ F _____ · DEBRIEF PROMPT: “What did the crisis reveal about our team?”

Mission 3 Gate

A5 Colony Crisis

Required to pass: Health & Body · Sustainability · Community Health · Civics

Run the gate as a live event — teams of four, one Group Leader as flight director. Initial each trainee who passes; record the date and any badge awarded outside the simulation.

#	Trainee	Badges in hand	Gate passed	Date	GL initials
1			☐		
2			☐		
3			☐		
4			☐		
5			☐		
6			☐		
7			☐		
8			☐		
9			☐		
10			☐		
11			☐		
12			☐		
13			☐		
14			☐		
15			☐		
16			☐		
17			☐		
18			☐		
19			☐		
20			☐		
21			☐		
22			☐		
23			☐		
24			☐		
25			☐		

TEAMS: A _____ B _____ C _____ D _____ E _____ F _____ · DEBRIEF PROMPT: “What did the crisis reveal about our team?”

Badge award log

Knowledge badges are awarded in Mission Control when the trainee passes the lesson quiz — or here, by the Group Leader, for demonstrated skill or service outside the simulation. Log every award; badges are never lost.

Badge	Track	Mission	Trainees awarded	Date(s)	Notes
● Physics	Physical Science	M1			
● Chemistry	Chemistry & Combustion	M1			
● Engineering	Structural Engineering & Materials	M1			
● Math & Calculus	Applied Mathematics	M1			
● Biology	Life Science & Systems Biology	M1			
● Civics & Leadership	Organizational Design & Civic Responsibility	M1			
● Health & Body	Exercise Science & Human Physiology	M1			
● Psychology	Human Psychology & Behavioral Science	M1			
● First Aid	Emergency First Response	M2			
● Nutrition	Applied Nutrition & Food Safety	M2			
● Anatomy	Human Anatomy & Musculoskeletal System	M2			
● Mental Health	Mental Health First Aid & Wellbeing	M2			
● Communication	Interpersonal Communication & Conflict Resolution	M2			
● Empathy	Social-Emotional Intelligence	M3			
● Conflict Resolution	Mediation & Restorative Practice	M3			
● Sustainability & Earth Systems	Environmental Science & Closed-Loop Systems	M3			
● Community Health & SDOH	Public Health & Social Determinants of Health	M3			

TIER PROMOTIONS THIS COHORT: BASIC → AMBASSADOR _____ · AMBASSADOR → GROUP LEADER _____



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FORCE
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