Mission to Mars - Challenge Cards

LESSON 1: OBJECT POSITIONING AND SCALING

MILD CHALLENGE

Sun-Earth-Moon System

Put the sun in the middle.
Put Earth next to the sun.
Put the moon next to Earth.
Make the sun biggest, Earth medium, moon smallest.

You did it when:

Your sun, Earth and moon are the right sizes and in the right places!

MEDIUM CHALLENGE

Solar System

Make a solar system with the sun and 4 planets.
Put them in order from closest to farthest.
Make them different sizes like the real solar system.

You did it when:

Your planets are in the right order and look realistic!

HOT CHALLENGE

Complete Solar System

Make all 8 planets in the right order.
Add moons for the big planets.
Make everything the right size compared to each other.

You did it when:

Your solar system looks like the real one with all planets and moons!

LESSON 2: SIMPLE ANIMATION PATHS

MILD CHALLENGE

Earth Goes Around Sun

Make a circle path around the sun.
Make Earth move around this path one time.
Make sure it moves smoothly.

You did it when:

Earth moves smoothly around the sun without stopping!

MEDIUM CHALLENGE

Two Planets Moving

Make paths for Earth and Mars.
Make both planets move around the sun.
Make one planet move faster than the other.

You did it when:

Both planets move smoothly with different speeds!

HOT CHALLENGE

Many Planets Moving

Make 4 or more planets move around the sun.
Make planets closer to the sun move faster.
Add spinning while they move around.

You did it when:

All your planets move and spin like a real solar system!

LESSON 3: CONTINUOUS LOOPS

MILD CHALLENGE

Earth Never Stops

Use a forever loop.
Make Earth go around the sun forever.
It should never stop moving.

You did it when:

Earth keeps going around and around without stopping!

MEDIUM CHALLENGE

Earth and Moon Together

Make Earth go around the sun forever.
Make the moon go around Earth forever.
Both should move at the same time.

You did it when:

Earth and moon both keep moving together smoothly!

HOT CHALLENGE

Lots of Objects Moving

Make 3 or more objects move forever.
Each one should move at a different speed.
They should all move at the same time.

You did it when:

All your objects keep moving with different speeds!

LESSON 4: MULTIPLE OBJECT ANIMATION

MILD CHALLENGE

Two Planets, Different Speeds

Make Mercury and Earth move at the same time.
Make Mercury move faster than Earth.
You should see the speed difference clearly.

You did it when:

You can see Mercury moving faster than Earth!

MEDIUM CHALLENGE

Four Planets Moving

Make 4 planets all move at the same time.
The closest planet should be fastest.
The farthest planet should be slowest.

You did it when:

All planets move with speeds that make sense!

HOT CHALLENGE

Whole Solar System

Make all 8 planets move at the same time.
Add moons that also move.
Make it look like the real solar system.

You did it when:

Your solar system looks and moves like the real one!

LESSON 5: SIMPLE BUTTON CONTROLS

MILD CHALLENGE

Control an Astronaut

Make Up, Down, and Stop buttons.
When you click them, the astronaut should move.
Test all the buttons work.

You did it when:

All your buttons make the astronaut move the right way!

MEDIUM CHALLENGE

Six Direction Control

Make 6 buttons: Up, Down, Left, Right, Forward, Back.
Add a Stop button too.
Test that all directions work.

You did it when:

Your astronaut can move in all 6 directions and stop!

HOT CHALLENGE

Control Two Objects

Control 2 different objects with separate buttons.
Make them move at different speeds.
Add special moves like spinning.

You did it when:

You can control both objects separately with cool moves!

LESSON 6: GRAVITY TOGGLE BOX

MILD CHALLENGE

Magic Gravity Box

Make a box that changes color when clicked.
When you click it, gravity turns on or off.
The box should float up or fall down.

You did it when:

Your box changes color and floats or falls when clicked!

MEDIUM CHALLENGE

Control Lots of Objects

Make the gravity box affect many objects.
Different objects should act differently.
Show when gravity is on or off with colors.

You did it when:

All objects respond to your gravity control!

HOT CHALLENGE

Advanced Physics Control

Make multiple gravity controls.
Add bouncing and sliding effects.
Control gravity in different directions.

You did it when:

You have amazing physics controls that do cool things!

LESSON 7: MARS CONTROL ROOM

MILD CHALLENGE

Simple Control Room

Make a list with 3-4 objects.
Make "Gravity Off" and "Gravity On" buttons.
All objects should respond together.

You did it when:

All objects float or fall together when you press buttons!

MEDIUM CHALLENGE

Mars Control Room

Make a control room with 6+ objects.
Heavy and light objects act differently.
Make it look like a real Mars base.

You did it when:

Your control room looks real and controls work perfectly!

HOT CHALLENGE

Mission Control Center

Make different control zones.
Add automatic systems and monitoring.
Create advanced physics effects.

You did it when:

Your mission control looks professional with amazing features!

LESSON 8: MARS BASE INTEGRATION

MILD CHALLENGE

Basic Mars Base

Make a Mars base with 2-3 areas.
Add a camera tour to show your base.
Use skills from all previous lessons.

You did it when:

Your Mars base has a working tour and shows your coding skills!

MEDIUM CHALLENGE

Mars Research Station

Make 4-5 different areas (lab, living area, garage).
Add multiple camera tours.
Include gravity controls and interactive equipment.

You did it when:

Your research station has many working areas and features!

HOT CHALLENGE

Complete Mars Colony

Make a huge Mars colony with 6+ areas.
Add life support, power, and communication systems.
Create mission scenarios and emergencies.

You did it when:

Your Mars colony looks professional and has amazing features!