**Scene 1: Introduction/Cutscenes**

\_ Introducing the character who was part of the NASA Psyche mission.

\_ Showing a brief flashback of the mission launch, the accident causing the character to lose his/her memory,

\_ Flashback and accident can be described as texts.

\_ Using the Timeline feature in Unity to create cutscenes (text slideshow).

\_ After the cutscenes reach a specific time (complete introduction), the scene changes to the second scene.

**Scene 2: Research begins (Psyche mission and spacecraft)**

\_ Now after the cutscenes end, this scene will appear.

\_ The character is now in NASA’s headquarters or laboratory or a room (design a background).

\_ Items (e.g. notes, spacecraft, rockets) trigger the character’s memory and he/she tries to recall by reading those items (drag and drop objects, and texts will appear).

\* ***TEXTS ARE BASED ON THE RESOURCES BELOW IN THIS DOC.***

\_ After the player finishes dropping and dragging the required items for the scene, a key will appear.

\_ The player will drag and drop the key at the door or exit in order to move to the next scene.

\_ And then the scene changes to the third scene

**Scene 3: Psyche asteroid**

\_ This scene is similar to the second one, but this time the discovery is about the psyche asteroid.

\_ Items could be planets and asteroids. A key also appears to lead to the final scene.

\* ***TEXTS ARE ALSO BASED ON THE RESOURCES BELOW IN THIS DOC***

**Scene 4: Ending**

\_ Design an ending scene that just contains a background with a locked door or exit indicating the character acquires adequate information about the mission.

**List of possible items:**

* Notes/notebooks: shows text/info regarding the Psyche mission.
* Spacecrafts: shows text/info regarding the spacecraft that is used for the mission.
* Asteroid: show text/info regarding the asteroid that the mission aims to.
* Planets: shows text/info about the planets that get involved with the asteroid.
* Rockets: shows text/info about the mission launch.

***\* Items can be made based on the below resources.***

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**WHAT IS PSYCHE?**

Psyche is the name of an asteroid orbiting the Sun between Mars and Jupiter and the name of a NASA space mission to visit that asteroid, led by ASU. Psyche is the first mission to a world likely made largely of metal rather than rock or ice.

**WHEN WAS THE PSYCHE MISSION SELECTED?**

The Psyche mission was chosen by NASA on January 4, 2017.

**WHAT KIND OF MISSION IS PSYCHE?**

Psyche is the 14th mission selected for NASA’s Discovery Program, a series of relatively low-cost missions to solar system targets.

**WHAT CAN VISITING THE PSYCHE ASTEROID TELL US?**

The asteroid Psyche may be able to tell us how Earth’s core and the cores of the other terrestrial (rocky) planets came to be. (The terrestrial planets are Mercury, Venus, Earth, and Mars.) We can never go to the Earth’s core. Because we cannot see or measure Earth’s core directly, the Psyche asteroid may offer a unique window into the violent history of collisions and accretion that created the terrestrial planets. It is the only known place in our solar system where we can examine directly what may contain metal from the core of a planetesimal.

**WHY CAN'T WE VISIT EARTH'S CORE?**

The core of the Earth lies at a depth of 3,000 kilometers (more than 1,800 miles). We have only drilled to 12 kilometers (about 7.5 miles) — that’s the most our technology allows today. Additionally, Earth’s core lies at about 3 million times the pressure of the atmosphere. The temperature of Earth’s core is about 5,000 Celsius (~9,000 Fahrenheit).

**WHAT ARE THE PSYCHE MISSION SCIENCE GOALS?**

The Psyche mission science goals are to:

* Understand a previously unexplored building block of planet formation: iron cores.
* Look inside terrestrial planets, including Earth, by directly examining the interior of a differentiated body, which otherwise could not be seen.
* Explore a new type of world. For the first time, examine a world made not of rock and ice, but metal.

**WHAT ARE THE PSYCHE MISSION SCIENCE OBJECTIVES?**

The Psyche mission science objectives are to:

* Determine whether Psyche is a core, or if it is unmelted material.
* Determine the relative ages of regions of Psyche’s surface.
* Determine whether small metal bodies incorporate the same light elements as are expected in the Earth’s high-pressure core.
* Determine whether Psyche was formed under conditions more oxidizing or more reducing than Earth’s core.
* Characterize Psyche’s morphology.

**WHO IS BUILDING THE PSYCHE MISSION?**

The mission is led by Arizona State University. NASA’s Jet Propulsion Laboratory is responsible for mission management, operations and navigation. The spacecraft’s solar-electric propulsion chassis will be built by Maxar Technologies with a payload that includes an imager, magnetometer, and a gamma ray and neutron spectrometer.

**WHEN WAS THE PSYCHE ASTEROID DISCOVERED?**

The asteroid, Psyche, was discovered in 1852 by Italian astronomer Annibale de Gasparis. It was the 16th asteroid to be discovered. The asteroid was named for the goddess of the soul in ancient Greek mythology.

**WHERE IS THE PSYCHE ASTEROID?**

Psyche lies in the main asteroid belt between Mars and Jupiter.

**HOW LONG IS A DAY ON PSYCHE?**

A day on Psyche is about 4 hours and 12 minutes. This is the sidereal rotation period, or the “amount of time it takes for a [body] to completely spin around and make one full rotation.” You could live through just under six “days” on Psyche in the same time as one day on Earth!

**HOW LONG IS A YEAR ON PSYCHE?**

A year on Psyche lasts about five Earth years (about 1,828 Earth days).

**HOW FAR IS THE PSYCHE ASTEROID FROM THE SUN?**

Psyche orbits the Sun at an average distance of 3 astronomical units (AU) (about 280 million miles); Earth orbits at 1 AU (about 93 million miles). Because Psyche and Earth orbit at different speeds, the distance from Earth to Psyche varies over a large range! From < 2 AU to > 4 AU.

**HOW DENSE IS THE PSYCHE ASTEROID?**

Psyche is dense. Measurements are still being made; Psyche’s bulk density appears to be 3,400-4,100 kilograms per cubic meter (kg/m3) (a mix of rock and metal).

**HOW BIG IS THE PSYCHE ASTEROID?**

As asteroids go, Psyche is relatively large and has an irregular shape. It is 279 x 232 x 189 kilometers (173 x 144 x 117 miles). The Psyche asteroid has a surface area of about 165,800 square kilometers (approximately 64,000 square miles).

**HOW BIG WILL THE PSYCHE SPACECRAFT BE?**

The full spacecraft, including the solar panels, is 24.76 meters (~81 feet) long by 7.34 meters (~24 feet) wide. That is about the size of a (singles) tennis court.

**WHAT LAUNCH VEHICLE WILL THE PSYCHE MISSION USE?**

NASA has selected SpaceX of Hawthorne, California, to provide launch services for the Psyche mission. The Psyche mission will launch on a Falcon Heavy rocket from Launch Complex 39A at Kennedy Space Center in Florida.

**HOW WILL THE PSYCHE SPACECRAFT GET TO PSYCHE?**

The Psyche spacecraft will use solar-electric (low-thrust) propulsion. Solar electric propulsion uses electricity from solar arrays to create electromagnetic fields to accelerate and expel charged atoms (ions) of xenon to create a very low thrust with a very efficient use of propellant.

**HOW FAR WILL THE PSYCHE SPACECRAFT TRAVEL?**

From launch to arrival at the first science orbit around the asteroid, the spacecraft will travel 1,496,883,202 (~1.5 billion) miles or 2,409,000,000 (~2.4 billion) kilometers! From launch to the end of the primary mission, it will travel 2,038,718,881 (~2 billion) miles or 3,281,000,000 (~3.3 billion) kilometers!

Psyche will use an estimated 922 kilograms (7,022.46 moles) of xenon to travel 2.409 billion kilometers to Psyche. That’s 1.76 x 1018 atoms of xenon per kilometer. Or 1.76 x 1012 atoms per millimeter traveled.

**HOW MUCH RAW DATA DOES THE PSYCHE MISSION EXPECT TO DELIVER OVER ITS LIFETIME?**

The mission is projected to deliver 620 gigabytes of data to NASA’s Planetary Data System (PDS); this is approximately the equivalent amount of storage on a standard laptop computer. In addition, we also need 450 GB for raw data and telemetry and 2,480 GB for multiple versions of PDS data products. In all, we will need 3,550 GB to support the mission.

**WHAT KIND OF SCIENCE DATA IS PSYCHE SEEKING AND IN WHAT FORMAT WILL THOSE DATA BE RECEIVED?**

The Psyche spacecraft includes three instruments: a magnetometer, multispectral imager, and gamma ray and neutron spectrometer. It will also use the X-band radio telecommunications system to measure Psyche’s gravity field to high precision.