

## Homework: Design a Mission and a Patch

Use the worksheet provided in class to complete this assignment. If you lose the worksheet, look for a copy in Resources. You must PRINT a copy to complete the assignment.

Homework Due: Tuesday, May 14 at the start of class

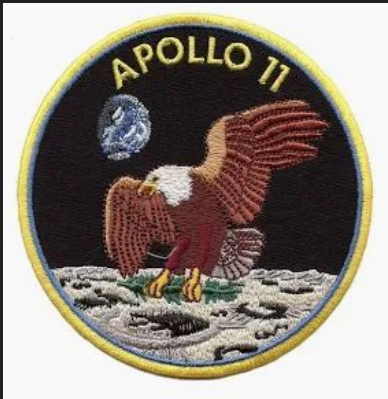
# There are various mission types based on equipment:

Rockets and Shuttles...	...used for leaving Earth
Space probe satellite...	...exploring the atmosphere of gas giants
Orbiter satellite...	...orbit a body in space and observe/collect data
Lander...	...land equipment on another planet, moon, asteroid, etc.
Rover...	...explore the surface of a moon or planet

Here are some examples of missions...

# Apollo Missions

Apollo was the NASA program that resulted in American astronauts' making a total of 11 space flights and walking on the moon. The first four flights tested the equipment used in the Apollo Program. Six of the other seven flights landed on the moon. The first Apollo flight happened in 1968.



Apollo 11 Mission Patch

# Curiosity Rover - Mission Details

*Did Mars ever have the right environmental conditions to support small life forms called microbes?* Early in its mission, Curiosity's scientific tools found chemical and mineral evidence of past habitable environments on Mars. It continues to explore the rock record from a time when Mars could have been home to microbial life.



Mars Curiosity Rover Mission Patch

# Europa Clipper

NASA's Europa Clipper will conduct detailed reconnaissance of Jupiter's moon Europa and investigate whether the icy moon could have conditions suitable for life



Europa Clipper Mission Patch



# Design a Mission and Patch

Your assignment is to design a mission and a corresponding patch. You will need to determine:

Mission type - will it be an orbiter, lander....will there be a crew?

Destination - where are you going?

Mission goal(s) - why are you going there?

Science objective(s) - what will you look for or study as part of your reason for going?

Mission name - choose an inspirational and descriptive name for your mission

Patch design - what images, colors, symbols will be used to represent the mission on an embroidered 2-D patch?

Answer these questions and design your patch on the worksheet provided in class.

# Example Mission Patch

NASA missions use patches to represent the work being done. Look at this mission patch from space shuttle mission, STS-118. It shows:



- The space shuttle – This crew flew on a shuttle named “Endeavor.”
- The International Space Station – The crew added a piece to the station where the star is located.
- The astronaut symbol – The gold star and lines with the circle around it.
- The number 118 – This was shuttle mission 118.
- The astronauts’ last names around the border.
- The nationality symbols – Stars and stripes represent the United States and the maple leaf by Williams represents Canada.
- The torch by Morgan – Represents knowledge; Barbara Morgan was a teacher before becoming an astronaut.



# More examples



Describe:

- Mission type - will it be an orbiter, lander....will there be a crew?
- Destination - where are you going?
- Mission goal(s) - why are you going there?
- Science objective(s) - what will you look for or study as part of your reason for going?
- Mission name - choose an inspirational and descriptive name for your mission
- Symbols and colors - how do the symbols and colors in your design explain the mission and its goals?

Mission description example: <https://www.nasa.gov/image-detail/amf-iss041-s-001/>