Navigation Specialist

Handout #1

e-Mission™: Moon, Mars, and BEYOND!

Planet Team: (Circle one) Jupiter Saturn Uranus Neptune Pluto

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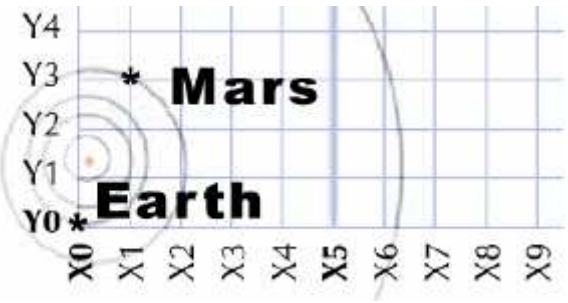
Plotting the Planets

The nine planets in the solar system orbit the sun. These orbits may be seen on a solar system map. By using this map, you will be able to find the lost ship.

Examine the map. The first two planets, Mercury and Venus, are not shown. The third planet, Earth, is located at the coordinate (X0, Y0). That spot is already labeled. Mars is also labeled and is located at (X1, Y3).



You will use location coordinates found on the data computer to plot and label the five planets: Jupiter, Saturn, Uranus, Neptune, and Pluto.

Plotting the Planets

Handout #1/ Task Card #3

Examine your team's data computer to get the location coordinates of each planet in the outer solar system and write them here:

Location Coordinates	
Mercury	Not shown
Venus	Not shown
Earth	(X0, Y0)
Mars	(X1, Y3)
Jupiter	(____, ____)
Saturn	(____, ____)
Uranus	(____, ____)
Neptune	(____, ____)
Pluto	(____, ____)

Plot and Label

Handout #1/ Task Card #4

1. Plot Jupiter on your own map by drawing a large dot.
2. Label the dot with the word "Jupiter."
3. Do the same thing for the other four planets: Saturn, Uranus, Neptune, and Pluto.
4. Your team has been assigned to a planet. Write the name and location coordinate of your planet here:

Planet:_____ Location Coordinate (X___,Y___)

5. Stop here and go to the Main Solar System Map on the wall.
6. Plot and label the location of your team's planet on the map.

Do NOT go on until you are told to do so by Mission Control.

Navigation Specialist

Handout #2

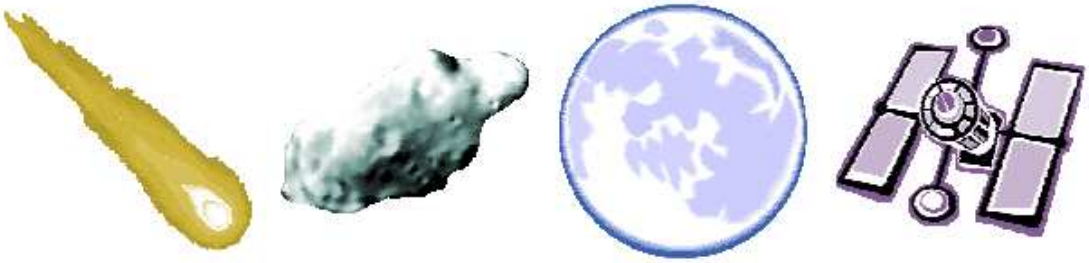
e-Mission™: Moon, Mars, and BEYOND!

Planet Team: (Circle one)

Jupiter Saturn Uranus Neptune Pluto

Plotting the Unknowns

The solar system has many objects besides planets. Some of these objects include comets, asteroids, moons, and satellites sent from Earth.



Satellites near the five planets have located five unknown objects. One of these objects may be the lost ship.

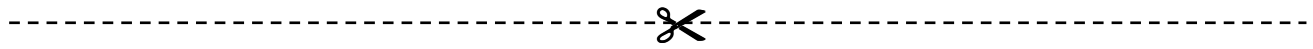
You will use location coordinates given to you on the data computer to plot and label the five unknown objects.

Plotting the Unknowns

Handout #2/ Task Card #3

Examine your team's data computer to get the location coordinates of each unknown object near each planet and write them here:

Location Coordinates	Discovered Near:	Location Coordinate
Unknown #1	Jupiter	(____,____)
Unknown #2	Saturn	(____,____)
Unknown #3	Uranus	(____,____)
Unknown #4	Neptune	(____,____)
Unknown #5	Pluto	(____,____)



Plot and Label

Handout #2/ Task Card #4

1. Plot "Unknown #1" on your own map by drawing a large dot.
2. Label the dot as "Unknown #1."
3. Do the same thing for the other four unknowns.
4. Which is your team's planet? (circle one)

Jupiter **Saturn** **Uranus** **Neptune** **Pluto**

5. Write the coordinates for the "unknown" closest to your planet:

Coordinates: (____,____)

6. Stop here and go to the Main Solar System Map on the wall.
7. Using this map, plot and label ONLY the unknown closest to your team's planet. For example, the Jupiter team would plot "Unknown #1."

Do NOT go on until you are told to do so by Mission Control.

Handout #3/ Task Card #1

Navigation Specialist

Handout #3

e-Mission™: Moon, Mars, and BEYOND!

Planet Team: (Circle one)

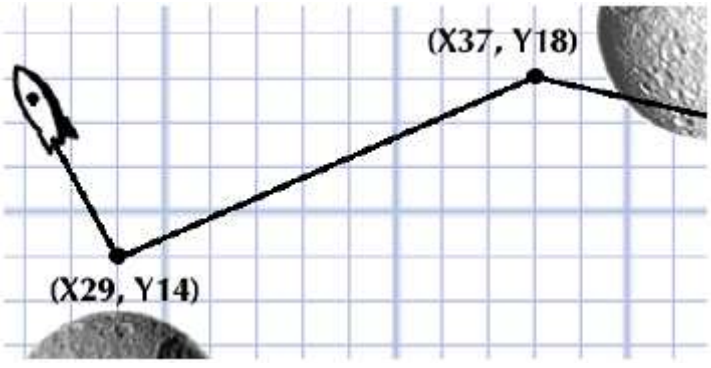
Jupiter Saturn Uranus Neptune Pluto

Tracking the Lost Ship

Handout #3/ Task Card #2

Today is Friday July 4th, 2080. The ship visited one moon per planet each day.

If we know the path the ship has taken, we may know where it is now. Use the location coordinates given to you on the data computer to plot the path the ship has taken over the last five days.



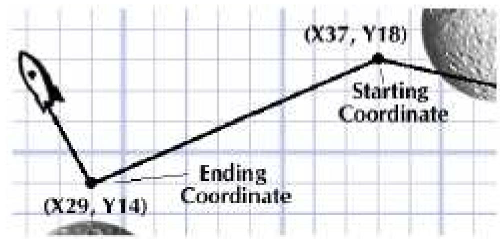
Plotting the Path

Handout #3/ Task Card #3

Examine your team's data computer to get the location coordinates of each stop the ship made and write them here. Also, check with your team's Transmissions Specialist to see if they know what day the ship was near each planet. If they do not know, do not circle the day of the week.

Ship Spotted Near:	Starting Coordinate	Ending Coordinate	Day (if known, circle one)
Jupiter	(_____,_____)	(_____,_____)	M, T, W, Th, F
Saturn	(_____,_____)	(_____,_____)	M, T, W, Th, F
Uranus	(_____,_____)	(_____,_____)	M, T, W, Th, F
Neptune	(_____,_____)	(_____,_____)	M, T, W, Th, F
Pluto	(_____,_____)	(_____,_____)	M, T, W, Th, F

In this example, →
Starting Coordinate is (X37, Y18) and
Ending Coordinate is (X29, Y14)



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Plotting the Path

Handout #3/ Task Card #4

Planet Team: **Jupiter** **Saturn** **Uranus** **Neptune** **Pluto**

(Circle one)

1. Plot both sets of coordinates for your planet ONLY. That is, draw a large dot at "Starting Point" and then draw another large dot at "Ending Point" on your own map.
2. Use a ruler to draw a line between the two dots.
3. Stop here. Go to the Main Solar System Map on the wall.
4. On the main map, plot the two coordinates and draw the line connecting them. Plot ONLY the one that is closest to your team's planet. Do not label the coordinates.

Can you tell from the main map where the ship is right now?