

EXPLORING the Planets

Fill in the blanks as you navigate through the program. After each planet's section there is a place for notes, make any additional notes from the summary and take each quiz after each section. (they are all fair game!)

1. According to the program, the solar system formed when a cloud of _____ and _____ began to _____.
2. Name the inner planets in order from closest to the Sun: _____, _____, _____, and _____.
3. What is the temperature ranges in the solar system? _____ to _____
4. Would you expect the eccentricity of Pluto's orbit to be greater or smaller than the eccentricity of other planets? _____
5. What would you weigh on each of the planets in our solar system? Weight on earth _____ lbs.

Mercury		Venus		The Moon	
Mars		Jupiter		Saturn	
Uranus		Neptune		Pluto	

6. How old would you be on each of the other planets? Your current age is _____ Earth years.

Mercury		Venus		The Moon	
Mars		Jupiter		Saturn	
Uranus		Neptune		Pluto	

7. The inner planets are made of _____.
8. Jupiter and Saturn are composed of _____

_____.
9. Uranus and Neptune are composed of _____

_____.
10. What are the top three elements that inner planets are made of? _____, _____, and _____.
11. The planet with the lowest density is _____, and the planet with the highest density is _____.

12. List the density of each planet:

Mercury		Venus		The Moon	
Mars		Jupiter		Saturn	
Uranus		Neptune		Pluto	

13. If you could find a huge glass of water, would any of the planets float in it? _____ If so, which ones?

14. What factor was mentioned as key to why the outer planets are bigger than the inner planets? _____

15. On slide 41, what sentence did you create to remember the order of the planets? M _____ V _____
E _____ M _____ J _____ S _____ U _____ N _____ (P _____ optional)

16. What seven processes will we be using to describe how each planet was sculpted and shaped?

_____ and _____

MERCURY

Diameter	km	miles	Period of rotation	
Distance from the Sun	km	miles	Period of revolution	
Known Satellites	Atmosphere:			

17. What might have caused the following features on Mercury?

- a. Basins:
- b. Wrinkle Ridges
- c. Fault Scarps

18. What caused the “weird terrain”? _____
_____.

19. What type of evidence is there that lava once flowed on Mercury? _____
_____.

20. Is there any ice on Mercury? _____ If so, where might it be? _____.

NOTES ON MERCURY:

VENUS

Diameter	km	miles	Period of rotation	
Distance from the Sun	km	miles	Period of revolution	
Known Satellites	Atmosphere:			

21. How do the mountain ranges on Venus differ from the mountain ranges on Earth? _____
_____ What does that suggest? _____

22. What types of volcanoes are seen on Venus? _____
23. How does the atmosphere of Venus differ from Earth's? (composition and weather types) _____
- _____
- _____
24. Based on what you know about the water filtering out light in the oceans, what colors are filtered out by sulfuric acid on Venus? _____

NOTES ON VENUS:

EARTH

Diameter	km	miles	Period of rotation	
Distance from the Sun	km	miles	Period of revolution	
Known Satellites		Atmosphere:		

25. How is Earth unique in the solar system? _____

NOTES ON EARTH: (we've been studying this stuff all year, so if you need to add a few notes to refresh your memory, here's your chance! It's all fair game on the exam!)

MOON

Diameter	km	miles	Period of rotation	
Distance from the Sun	km	miles	Period of revolution	
Known Satellites		Atmosphere:		

26. What is a maria? _____
27. Describe the "highlands": _____
28. True or false (circle one) the same side of the Moon is always facing us on Earth.
29. What are the three most abundant rocks on the Moon's surface? _____,
_____, and _____.
30. Why are the maria smooth? _____
31. What is a rille? _____

32. If you like looking at rocks in thin section, like those in slides 183 through 189, there is a future for you in geology!!

33. How do *some* scientists think the Moon was formed? _____.

NOTES ON THE MOON:

MORE NOTES ON THE MOON:

MARS

Diameter	km	miles	Period of rotation	
Distance from the Sun	km	miles	Period of revolution	
Known Satellites		Atmosphere:		

34. What is Valles Marineris? _____

35. What is the Tharsis Bulge? _____

36. Why would the CO₂ frost be in Hellas Basin on the south pole? _____

_____.

37. What is the difference between the ice at the northern pole of Mars and the southern pole? _____

_____.

38. What is a rampart crater? _____.

39. Why is Olympus Mons bigger than Earth volcanoes? _____

_____.

40. On slide 266, use the hand tool to look around the Pathfinder landing site.

41. What are some of the pieces of evidence that water was/is on Mars? _____

42. Who are Phobos and Deimos? _____

NOTES ON MARS:

NOTES ON ASTEROIDS AND COMETS:

JUPITER

Diameter	km	miles	Period of rotation	
Distance from the Sun	km	miles	Period of revolution	
Known Satellites		Atmosphere:		

43. What are the two main gasses in Jupiter's atmosphere? _____ and _____
44. What is the red spot? _____
45. How much bigger are Saturn's rings compared to Jupiter's? (Mass of Saturn's rings / Mass of Jupiter's rings... watch the units!) _____
46. Describe the surface of Jupiter (and the other gas planets): _____

47. What Earth-like processes are happening on Io? _____

NOTES ON JUPITER:

SATURN

Diameter	km	miles	Period of rotation	
Distance from the Sun	km	miles	Period of revolution	
Known Satellites		Atmosphere:		

48. What are the rings of Saturn made of? _____
49. What is Titan, and how is it significant? _____

NOTES ON SATURN:

URANUS

Diameter	km	miles	Period of rotation	
Distance from the Sun	km	miles	Period of revolution	
Known Satellites		Atmosphere:		

50. Why is Uranus unique among the planets? _____

51. Check out the names of Uranus' moons. If you had to name your dog after one of these moons, which would be your top three choices? _____

NOTES ON URANUS:

NEPTUNE

Diameter	km	miles	Period of rotation	
Distance from the Sun	km	miles	Period of revolution	
Known Satellites		Atmosphere:		

52. How fast do the clouds on Neptune move? _____

53. Why is Triton pink? _____

NOTES ON NEPTUNE:

PLUTO

Diameter	km	miles	Period of rotation	
Distance from the Sun	km	miles	Period of revolution	
Known Satellites		Atmosphere:		

54. Who is Charon? _____

55. Pluto has the most _____ and _____ orbit of any planet. What might have caused this? _____

NOTES ON PLUTO

Planet Database

56. Define orbital inclination and state the orbital inclination for each planet.

Mercury		Venus		Earth	
Mars		Jupiter		Saturn	
Uranus		Neptune		Pluto	

57. Define orbital velocity and state the orbital velocity for each planet.

Mercury		Venus		Earth	
Mars		Jupiter		Saturn	
Uranus		Neptune		Pluto	

58. Define escape velocity and state the escape velocity for each planet.

Mercury		Venus		Earth	
Mars		Jupiter		Saturn	
Uranus		Neptune		Pluto	

59. Define orbit eccentricity and state the orbit eccentricity for each planet.

Mercury		Venus		Earth	
Mars		Jupiter		Saturn	
Uranus		Neptune		Pluto	

60. Summarize the mission information for each planet.

Mercury: _____

Venus: _____

Earth: _____

Mars: _____

Jupiter: _____

Saturn: _____

Uranus:

Neptune:

Pluto:

Planet Processes: Summarize each type of process. Include the types and the features formed by each process (where applicable).

61. Landslides:

62. Volcanism:

63. Flowing Water:

64. Summarize the section on stream development. Why are the patterns different?

65. Complete the chart on frame 602 and summarize the results.

66. Wind:

67. On slide 629 how do the flags react to different wind speeds? Why does this happen? _____

68. Impact Cratering: _____

69. Explain what happened on July of 1994. _____

70. Tectonics: _____

71. How do tectonic forces shape planets? _____

72. Atmosphere: _____

73. Answer the question on slide 688. _____

74. Answer the question on slide 692. _____

75. What did the Huygens probe discover about Titan's atmosphere? _____

76. Summarize the Nasa News on frame 313. _____

77. Where are most asteroids found? _____

78. What is Jupiter's role in the history of asteroids? _____

Internet Search:

79. What is the Kuiper Belt and where is it located? _____

80. Why is Pluto not considered a planet anymore? What term is used to identify Pluto? _____

Planetary Explorer Game: Choose a level and identify at least 10 celestial bodies from the game.