

EXPLORING THE SOLAR SYSTEM

Ice Orbs

Try this!



Look closely at the ball of ice. What do you see on the outside and the inside? Compare what you see to the images of icy moons.



Choose an object hidden under the surface of the ice. What do you observe? Try using tools to get more information!



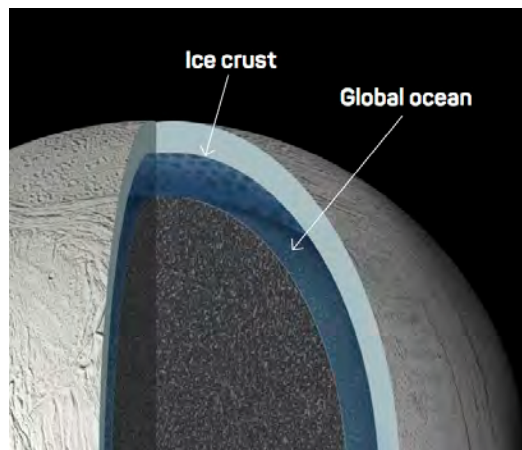
Can you tell what the hidden object is made of? Is it alive? How could you learn more about the object or the ice?

Ocean worlds may be the most likely places to discover life beyond Earth.

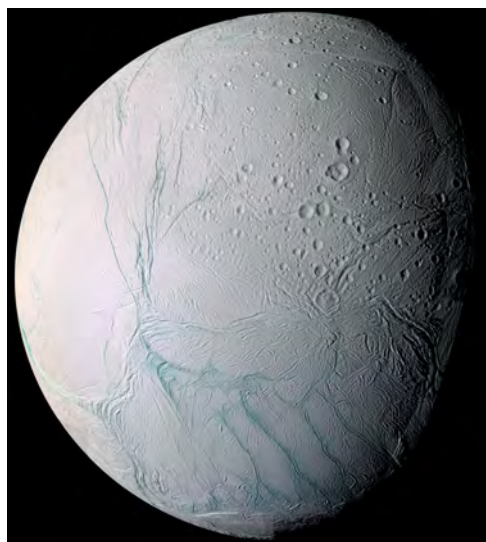
Scientists think that ocean worlds have icy, frozen exteriors and warmer, liquid interiors.

Examples of ocean worlds in our solar system include Jupiter's moons Europa, Ganymede, and Callisto, and Saturn's moons Enceladus and Titan. The ice orbs you investigated in this activity are different from these ocean worlds, because they're frozen all the way through.

To study distant ocean worlds, scientists make observations using a variety of tools and then compare the data to geological processes on Earth. Sometimes scientists can use telescopes based on Earth to observe these far-off places, and sometimes they gather data using spacecraft with special instruments.



Enceladus may have a frozen outer shell and an ocean beneath its surface.



Ocean worlds such as Enceladus might host microbial life.

Astrobiologists are searching ocean worlds for evidence of life. Because water is essential to life on Earth, some scientists think that ocean worlds are the most likely places to find living things in other parts of the universe. NASA missions such as Juno and Cassini are contributing data to astrobiology research.

In the future, NASA researchers hope to send scientific missions to these cold and alien worlds to gather more data. Future missions might take better images, analyze the chemical and mineral compositions of the oceans, and probe the surfaces and interiors of these planetary bodies.