

Discovering Neptune - Activities (Ages 12-15)



Today we are going to investigate:

- How to find Neptune in the sky
- The structure and composition of planet Neptune
- The weather on Neptune
- Neptune's orbit around the Sun

Activities

1

Today we are going to look at Neptune, the outermost planet in the Solar System. It is so far away it cannot be seen without a telescope but you can see it in Night Sky. Start up Night Sky and use your finger to move around the sky. Find the planet Neptune (Tip: if you can't find it, try typing 'Neptune' into the Search box). Double tap on Neptune for a close up view of the planet's 3D model. Use your finger to move the model around so you can see different views of Neptune.

Question: Can you see surface features like mountains and craters?

2

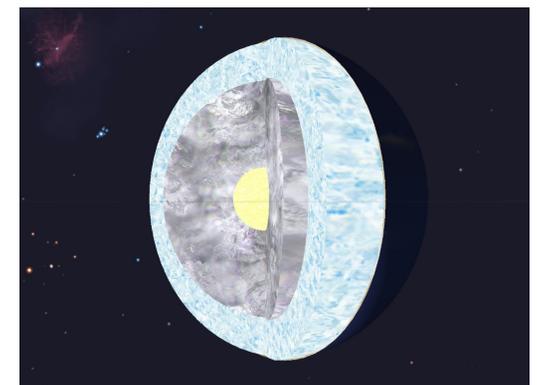
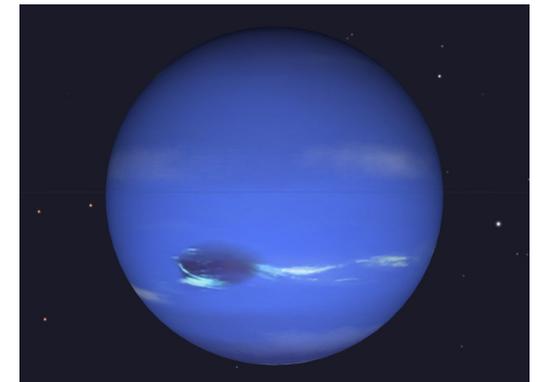
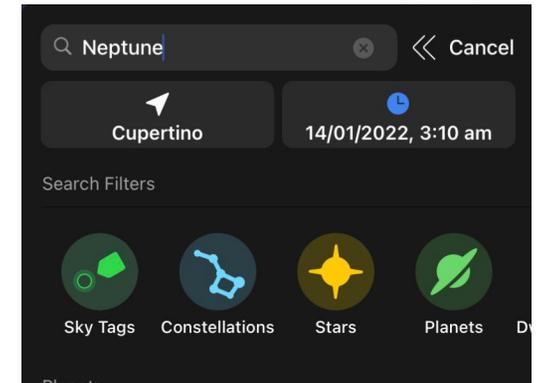
Neptune is not a rocky planet like Earth, so any features we see on it are not solid features. Instead they are weather phenomena in its upper atmosphere. The planet occasionally displays oval features. These are storms similar to cyclones on Earth. The largest of these storms has been going on for years and is nicknamed "Big Blue".

Question: Can you find Big Blue?

3

The diameter of Neptune is about four times that of Earth so Neptune is a giant planet. Planets like this have a core, around it is a layer called the mantle, the atmosphere is above the mantle. In the top right menu, tap on the  for a view of the planet's interior. Tap on each layer to bring up a descriptive label.

Question: What is the mantle inside Neptune made of?



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4

Neptune is 30 times as far from the Sun than the Earth so it takes longer to orbit the Sun than Earth. You can investigate this for yourself using Night Sky. Return to Sky View by tapping the  in the top right corner of the screen and find Neptune again. Look towards the horizon and note which compass point (S, SE, E, NE etc) the planet is currently closest to. Use the Space Travel tab to advance the year one year at a time by tapping the year until Neptune has moved about 45 degrees.

Questions: i) How many years did it take Neptune to move about 45 degrees?
ii) Based on your last answer roughly how long do you think it takes Neptune to make one complete orbit (move 360 degrees) around the Sun?

45 years 100 years 175 years

What we have discovered:

- Neptune is the eighth and most distant planet from the Sun
- Neptune is categorised as a giant planet
- Big Blue is a large and long-lasting storm in Neptune's atmosphere
- Neptune takes decades to orbit the Sun

