

Discovering Pluto - Activities (Ages 12-15)



Today we are going to investigate:

- Where Pluto is in the sky
- The surface features of Pluto
- Pluto's unusual orbit
- Pluto's status as a planet

Activities

- 1 Start up Night Sky and look around the sky by moving your finger. Look for Pluto, if you can't find it type 'Pluto' into the Search box. Tap on Pluto to bring up the 3D model. You can find detailed data about Pluto by tapping on the  icon.

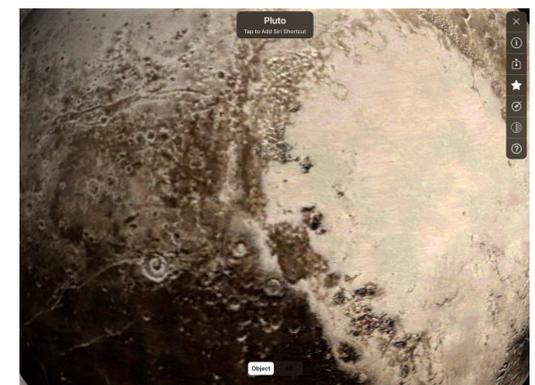
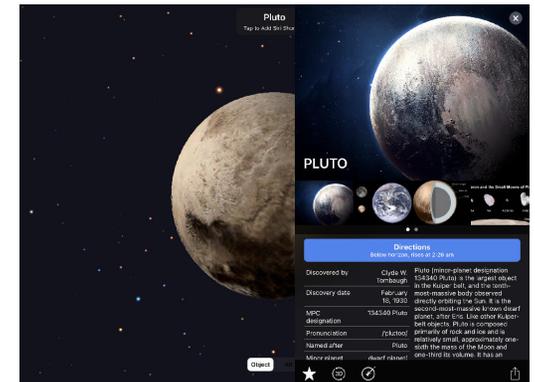
Question: Pluto was discovered by astronomer Clyde Tombaugh but who named Pluto?

- 2 Tap the  in the corner to close the Info panel. Return to the 3D view of Pluto, using your finger move Pluto around and explore its surface. You'll see that the surface of Pluto has two types of terrain, light coloured and dark coloured.

Question: Do you find more impact craters in the light or dark areas?

- 3 Pluto's darker coloured features are the oldest areas while the lighter-coloured areas are much younger. Material seems to have flowed out from under Pluto's thin crust covering craters in these areas.

Question: From this evidence does this suggest that Pluto is solid or liquid under its crust?



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- 4 The **Ecliptic** is the imaginary line in the sky that the Sun and planets appear to move along. In Night Sky it is shown as a yellow dotted line. Pluto's orbit around the Sun is very **inclined** to the Ecliptic. This means Pluto's orbit is at an acute angle to the Ecliptic. Tap on Pluto to bring up its orbit, it appears as an orange dotted line. Observe the angle Pluto's orbit makes with the Ecliptic.

Question: Which two of these four objects have similar highly inclined orbits to Pluto?

Mars Eris Saturn Makemake

- 5 This highly inclined orbit is one of the reasons why astronomers suspected that Pluto was not a planet. In 2006 astronomers invented a new definition for a planet. Simply a planet orbits the Sun, is round in shape and has swept away all the smaller objects in its orbit. Pluto only meets the first two of these conditions so Pluto was no longer classified as a planet.

Question: What type of object has Pluto been reclassified as?

Exoplanet Dwarf planet Planetoid



What we have discovered:

- Pluto was discovered in the modern era
- It has a surface with two types of terrain
- It has an unusual orbit
- In 2006 Pluto was reclassified as a dwarf planet