The Zodiac And Ecliptic - Activities (Ages 12-15)

Today we are going to investigate:

- How the Sun and planets move through the sky over a year
- The significance of some of the constellations
- Why the Sun and planets move in a fixed path through the sky

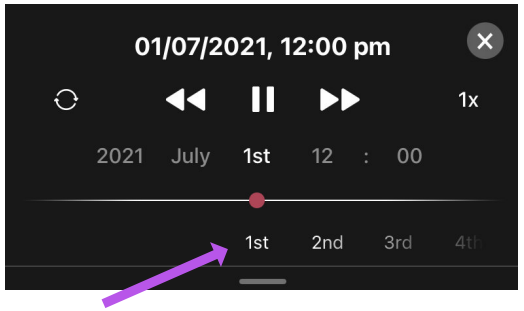
Activities

1 Turn on Night Sky and use your finger to move around the sky. Find the Sun and any planets.

Question: Where do the planets appear in relation to the Sun?

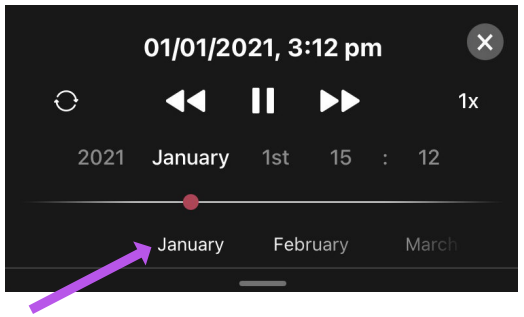
a) Far above the Sun
b) Far below the Sun
c) Mostly in line with the Sun

2 Go to the Main Menu and tap on the Space Travel tab. Select the day number and use your finger to swipe along the bottom row of day numbers to advance time day by day. Watch how the Sun and planets move.



Question: Does the Sun stay in the same constellation or does it move into different star patterns over time?

3 Go back to the Space Travel tab and set the month to January. Select the month and swipe along the bottom row of months to advance time through the year month by month. As you advance the months look to see which constellation the Sun is in or closest to. Make a list of the twelve constellations the Sun passed through during the year.



Question: What is the special name for these twelve constellations? (Hint: you often hear this word connected with horoscopes!)

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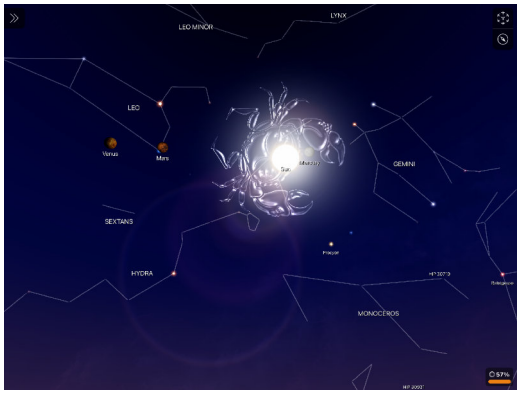
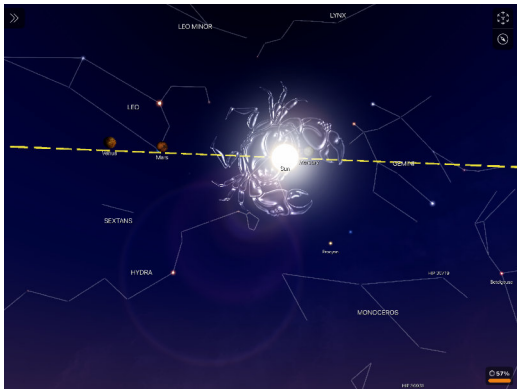
4 In ancient times people thought these twelve constellations were special because the Sun, Moon and planets always appear to move through them in the sky. These twelve constellations have become known as the constellations of the Zodiac. Zodiac means ‘line of animals’ as it looks like a band of creatures circling the Earth. However, one of the constellations is not a living creature.

Question: Tracing the path of the Sun can you see which zodiac constellation is not a living creature?



5 This special path that the Sun, Moon and planets follow is called the e**cliptic** by astronomers. To see where the ecliptic is in the sky go to the app’s Settings, tap on Preferences and turn on Show Ecliptic Line. Look for the Moon and planets, notice how they lie near the ecliptic but are not necessarily on it. The ecliptic is the plane of the Earth’s orbit around the Sun and all of the planets’ orbits also lie close to it.

Question: Why do you think the planets move along the ecliptic with the Sun?



What we have discovered:

- Over the course of a year the Sun follows a regular path through the sky
- This path carries it through the twelve Zodiac constellations
- This path is called the ecliptic
- The orbits of the Moon and planets are also along or near the ecliptic