

# Discovering Mercury - Activities (Ages 12-15)



## Today we are going to investigate:

- How to find Mercury in the sky
- Mercury's position in the Solar System
- How long Mercury takes to orbit the Sun
- Mercury's physical characteristics

## Activities

- 1 Start up Night Sky and move around the sky to find the planet Mercury (Tip: if you can't find it, try typing 'Mercury' into the Search box). Tap on Mercury to see its orbital path.

**Question:** Is Mercury's orbit closer or further from the Sun than Earth's? Do you think the surface of Mercury will be hotter or cooler than Earth's?

- 2 Let's investigate how long it takes Mercury to complete an orbit of the Sun. This is called its orbital period. Look at Mercury's current position in its orbit then use the Space Travel tab to move time to the next month and see how far Mercury has moved, then advance the viewing time ahead another month to see how much further it has moved.

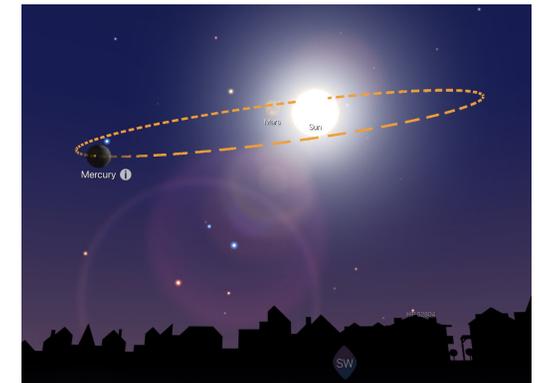
**Question:** Based on your observations roughly how long do you think it takes Mercury to make one complete orbit.

- a) 30 days    b) 90 days    c) 360 days

- 3 Double tap on Mercury to see the planet's 3D model. You can move the planet around with your finger so you can see different views of Mercury. You will see that there are no clouds or oceans and the surface is largely covered with asteroid impact craters.

**Question:** Can you draw any conclusions about Mercury's atmosphere from these facts?

- a) It's less dense than Earth's  
b) It's even denser than Earth's  
c) There is no atmosphere



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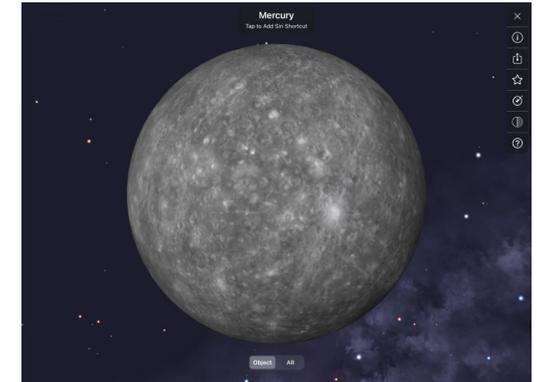
- 4 Mercury is smaller than Earth and is closer in size to our Moon. The planet also looks very like the Moon. However, there are a couple of very important differences. Although the gravitational pull on the surface of Mercury is weaker than on Earth, it is about twice of that on the Moon. Mercury has also a very strong magnetic field while the Moon has no magnetic field.

**Question:** Which of those statements about Mercury are supported by this evidence?

- a) Mercury doesn't have a moon of its own
- b) It is made of denser material than the Moon
- c) It has a core made of iron

- 5 The planet Venus is almost twice as far from the Sun as Mercury and receives only about a third of the energy from the Sun as Mercury does. Despite these facts the surface temperature of Venus is even higher than the daytime temperature on Mercury.

**Question:** Can you explain this temperature difference between Mercury and Venus? (Hint: Venus has a dense atmosphere which is rich in carbon dioxide.)



### What we have discovered:

- Mercury is a small rocky planet
- It orbits close to the Sun
- Mercury is the smallest planet in the Solar System
- Mercury is heavily cratered and has virtually no atmosphere