

NAME: _____

PERIOD: _____

LAB #: _____

LAB: ORBIT ARCHITECT

STEP #1

Launch the "Orbit Architect" app on your iPad.

STEP #2

Hit the "X" on the top right corner of the screen to remove the text.

STEP #3

Tap the gear icon on the bottom left of the screen and change the "Ground Track Length" to 0. Tap on the screen to view the orbit.

STEP #4

Tap on the "i" icon in the middle left of the screen and, by rotating two fingers on the screen, change the "Inclination" to as close to zero as possible.

STEP #5

Tilt the view of the Earth by swiping with one finger. Align the Earth so that Antarctica is in the center. Does the Earth appear to be in the middle of the green orbit? _____

Without changing any settings, locate the eccentricity of this orbit on the left side of the screen. Record this number to the nearest thousandth (three decimal places). _____

STEP #6

Without changing any settings, examine the green object as it orbits the Earth. Describe the shape of the path of this green object. _____

What do we call an object that orbits a planet? _____

What is the name of the motion of an object around another object? _____

STEP #7

Pinch out on the orbit so that the Semi-Major Axis increases. What impact does this have on the size and shape of the orbit? _____

As you increase the length of the Semi-Major Axis, what happens to the velocity (speed) of the green object?

STEP #8

Click on the "e" in the middle left of the screen. Pinch out to increase the eccentricity to 0.8500. What has happened to the shape of the orbit? _____

Describe how the speed of the green object changes as it orbits the Earth.

Click on the "e" in the middle left of the screen. Pinch in to decrease the eccentricity to 0.0000. What has happened to the shape of the orbit? _____

Describe how the speed of the green object changes as it orbits the Earth.
