

A Month of Moons

Your Challenge:

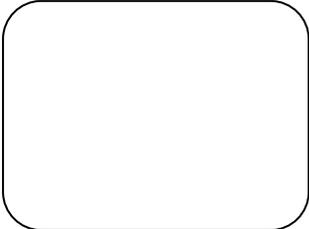
Night after night, the appearance and location of the Moon varies more than any other object in the sky. Your challenge is to discover a pattern in its motion and predict where the moon will be all month.

Discovering:

1. Choose West, 8PM, tonight. If the Moon is in the sky, hit the BACK key until it disappears below the horizon. Then advance once until you see it for the first time. If the Moon is not in the western sky, hit the BACK key until it appears in the west. Continue to BACK up time until it disappears below the horizon. Then advance once until you see it for the first time.

Record this date. _____

This tiny waxing crescent moon marks the first night of the current Moon cycle (also called a lunar month).

2. Draw how the Moon looks above the western horizon. Show the horizon in your drawing. Then push the NEXT button and watch as the Moon moves and changes phases. Continue pushing the NEXT button until the Moon leaves the West screen. 
2. Switch to the South screen (you may need to use the ZENITH screen instead, depending on time of year) and push the NEXT button until the moon moves all the way across this screen. Switch to the East screen and push the NEXT button until the Moon is full. Record the date of the full moon. _____

3. Now switch to the 5AM sky and look for the full moon. What direction do you look to see it?
_____ The full moon is the only phase that is up all night long.

5. Continue pushing the NEXT button. What happens to the Moon now? _____

6. Switch to the South (or Zenith) screen and then the East screen. Continue pushing the NEXT button until the crescent moon disappears. Record the day that the Moon disappears. _____

Back up one day. Draw how this last crescent moon looks. Also show the eastern horizon. For the next few days, the Moon will be between the Earth and Sun and will not be visible. 

7. Switch to the 8PM sky facing West and push the NEXT button until the crescent moon appears again. Record the date: _____
This is the beginning of the next lunar month.
How many days are there in a lunar month? _____

Making Science Sense:

You know that the moon orbits the Earth. Explain your observations in terms of the Moon's motion around the Earth. Also look at your drawings. Is the bright side of these crescents on the bottom (a smile) or on the top (a frown)? Explain why. (Remember that the Moon is reflecting sunlight.)