





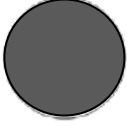

Name: _____ Date: _____ Pd: _____

Lunar Phase Simulator

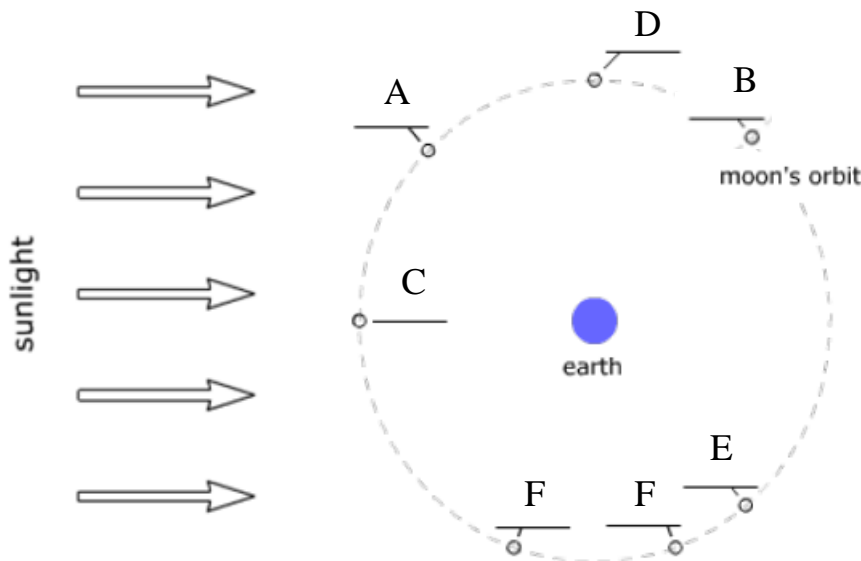
Directions: Use the *Lunar Phase Simulator* to answer the questions that follow. The URL for the simulator is below.

<http://astro.unl.edu/naap/lps/animations/lps.swf>

- The following sketches of the moon's appearance were made over about four weeks. Identify the phases and put them in the correct numerical order. One is labeled for you. Not all the phases of the moon are shown.

Picture	Order	Phase	Picture	Order	Phase
A 	3	Waning crescent	D 	2	Third quarter
B 	1	waning gibbous	E 	6	Waxing gibbous
C 	4	New	F 	5	Waxing crescent

- From the perspective of an observer, the moon moves clockwise / counter-clockwise (circle one) in its orbit around the Earth. The diagram below shows the sun's light coming in from the left. The moon's location is marked at several points in its orbit. These are the points the moon was at when the sketches above were drawn. Identify each position with the letter of the corresponding sketch. **Use the letters from the diagram in question number 1 above.**



3. Is there a dark side of the moon? If so, why? Yes, because the sunlight never shines on one-half of the moon.
4. How long, in days, does it take the moon to complete one cycle of phases? 29 days (19 hours)
5. If the moon is full today what phase do you expect it to be at in a week? 3rd Quarter
6. If the moon is full today what phase do you expect it to be in one month? Full
7. When the moon crosses the western side of the horizon plane it is **rising** (~~setting~~) (circle one).
8. When the moon crosses the eastern side of the horizon plane it is (~~rising~~) **setting** (circle one).
9. How many days are there between New Moon and Full Moon? 14 days 18 hours
10. Approximately how many days are there between Full Moon and Third Quarter? 8 days
11. Is it ever possible to see the Moon at noon (12pm)? Yes
12. Pause the simulator and use the drop down menu in the moon phase box to answer the following questions. Use an approximation for your answer in days.
- a. On what day is does a Waxing Crescent begin? 4 days
 - b. On what day does the First Quarter begin? 7
 - c. On what day does the Waxing Gibbous begin? 11
 - d. On what day does the Full Moon begin? 15
 - e. On what day does the Waning Gibbous begin? 18
 - f. On what day does the Third Quarter begin? 22
 - g. On what day does the Waning Crescent begin? 26
13. Run the simulator starting at a new moon and determine how many days the sun and Moon are both visible above the horizon. Be sure to watch the Horizon Diagram.

Approximate Number of Days 13-14 days

14. What percentage of the Moon is lit during the following phases?
- a. New 0%
 - b. Waxing Crescent 25%
 - c. First Quarter 75%
 - d. Waxing Gibbous 0%
 - e. Full Moon 100%
 - f. Waning Gibbous 75%
 - g. Third Quarter 50%
 - h. Waning Crescent 25%